

Piedmont Triad International Airport Area Transportation Study

April, 2003

Piedmont Triad Airport Area Transportation Study

Prepared by:

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In Cooperation with:

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
Highlights	
CHAPTER 1 – RECOMMENDED TRANSPORTATION IMPROVEMENTS	9
INTENT OF THE AIRPORT AREA STUDY	Ç
STUDY RECOMMENDATIONS	
SANDY RIDGE ROAD (SR 1850) EXTENSION - PURPOSE AND NEED	
AIRPORT CONNECTOR - PURPOSE AND NEED	
OTHER RECOMMENDATIONS	
DELETIONS FROM GREENSBORO LRTP	15
PHASING OF THE CONSTRUCTION PROJECTS	
CHAPTER 2 – ANALYSIS OF EXISTING ROADWAY SYSTEM	17
Study Area	17
Existing Facilities	
PROGRAMMED TRANSPORTATION PROJECTS	19
NON - PROGRAMMED TRANSPORTATION PROJECTS	20
THOROUGHFARE PLANS	
CAPACITY ANALYSIS OF THE EXISTING SYSTEM	
Traffic Crashes	22
CHAPTER 3 – FACTORS AFFECTING THE FUTURE ROADWAY SYSTEM	23
PROJECT ASSUMPTIONS	23
LAND USE SCENARIO	24
CHAPTER 4 – PRELIMINARY ALTERNATIVES	25
IDENTIFIED ALTERNATIVES	25
No Build or "Do Nothing" Alternative	
ALTERNATIVE A	
ALTERNATIVE B	29
ALTERNATIVE C	33
Alternative D	37
Alternative E	
Alternative F	
Alternative G	
Alternative H	
Alternative I	
Alternative J	
ALTERNATIVE K	
Alternative L	69
CHAPTER 5- FINAL ALTERNATIVES	73
ALTERNATIVES FOR PUBLIC REVIEW	73
DISCUSSION OF FINAL ALTERNATIVES	73
CHAPTER 6– ENVIRONMENTAL AND SOCIAL FACTORS	85
CONSIDERATION OF ENVIRONMENTAL/SOCIAL FACTORS	85
WETLANDS	
Tude a tened and Endangeded Species	84

Piedmont Triad Airport Area Transportation Study April 15, 2003



CHAPTER 7 – PUBLIC INVOLVEMENT	91
SUMMARY OF COMMENTS	91
Press Release	93
SUMMARY SHEET	96
PUBLIC COMMENTS FOR THE AIRDORT AREA TRANSPORTATION STUDY	101



Executive Summary

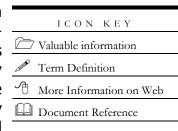
The economic and social well being of the Triad Area (which includes the Cities of Greensboro, High Point, and Winston-Salem) depends upon the quality of the transportation facilities that exist in the area. If people are able to travel about freely in an area today and as the economy grows, then the transportation systems have been planned to properly accommodate existing and future travel. Well-planned transportation systems will allow for economic growth, while simultaneously providing safe and efficient travel throughout the Triad Area.

The North Carolina Department of Transportation, in coordination with the Piedmont Authority for Regional Transportation (PART), Greensboro Urban Area Metropolitan Planning Organization, High Point Urban Area Metropolitan Planning Organization, and the Winston-Salem Urban Area Metropolitan Planning Organization cooperatively developed the Piedmont Triad Airport Area Study.

The goals of this study are:

- 1. future routing of I-73
- 2. relocation of Bryan Boulevard and immediate access to the airport terminal
- 3. improved access from High Point to the airport
- 4. improved access from Forsyth County to the airport
- 5. access to the airport using public transportation

This study sets forth a transportation system in the area, that will eventually become an element of local area Thoroughfare Plans, and that will serve the anticipated traffic and land development needs for the area. Other goals of this study will be to improve safety, air quality, promote growth and improve overall efficiency of the transportation network. See figure 1 for a vicinity map of the area.





NCDOT – North Carolina Department of Transportation

MPO – Metropolitan Planning Organization



PART is short for the Piedmont Authority For Regional Transportation. Their goal is to improve transportation through regional cooperation. Their current territory includes Alamance, Davidson, Forsyth, Guilford, Randolph, and Rockingham Counties. http://www.partnc.org



This report is divided into six chapters:

Chapter 1	Overview
Chapter 2	Recommended Plan (Complete description of the recommended plan)
Chapter 3	Analysis of Existing Roadway System (Year 2000 conditions)
Chapter 4	Factors affecting the Future Roadway System (Projected 2025 Conditions)
Chapter 5	Alternatives & Public Involvement (The various Alignments that were considered and used for public involvement in this study)
Chapter 6	Environmental Factors (Shows the consideration given to environmental factors when developing the plan)

Highlights

Major highlights of the Piedmont Triad Area Airport Study are outlined below. The following projects are discussed in detail in the Chapter 2, Recommendations. Figure 2 shows the recommended improvements, which correspond to Alternative 2.

- 1. I-40 / NC 68 / I-73 Connector
- 2. Airport Connector (From I-40 / NC 68 Connector to Forsyth County)
- 3. Sandy Ridge Road (SR 1850) Extension

This plan is a joint effort by the NCDOT, Greensboro MPO, High Point MPO, Winston-Salem MPO, and PART. This plan is intended to provide the Piedmont area with the necessary roadway improvements to satisfy the anticipated transportation needs for the airport study area until the year 2025. The NCDOT, the Greensboro MPO, High Point MPO, Winston-Salem MPO, and PART are jointly responsible for the proposed transportation improvements.

The proposed improvements will require inclusion in the Greensboro Urban Area Metropolitan Planning Organization (MPO) non-fiscally constrained Transportation Plan (formally called the Thoroughfare Plan).

It should be emphasized that the recommended plan is based on anticipated growth of the urban area as indicated by current trends. Prior to construction of specific projects, a more detailed study will be required to reconsider development trends and to determine specific locations and design requirements.

Future Year

The date in the future that a transportation study will be projected, usually 20-30 years. This study was projected to 2025.

Thoroughfare Plans

The NCDOT and MPOs are currently in a transition from a throughfare plan to a multimodal (non-fiscally constrained) transportation plan, based on revised state law. This should not be confused with the long-range transportation plan (which is fiscally constrained), which MPOs have to periodically update to meet Federal requirements.

Piedmont Triad Airport Area Transportation Study April 15, 2003

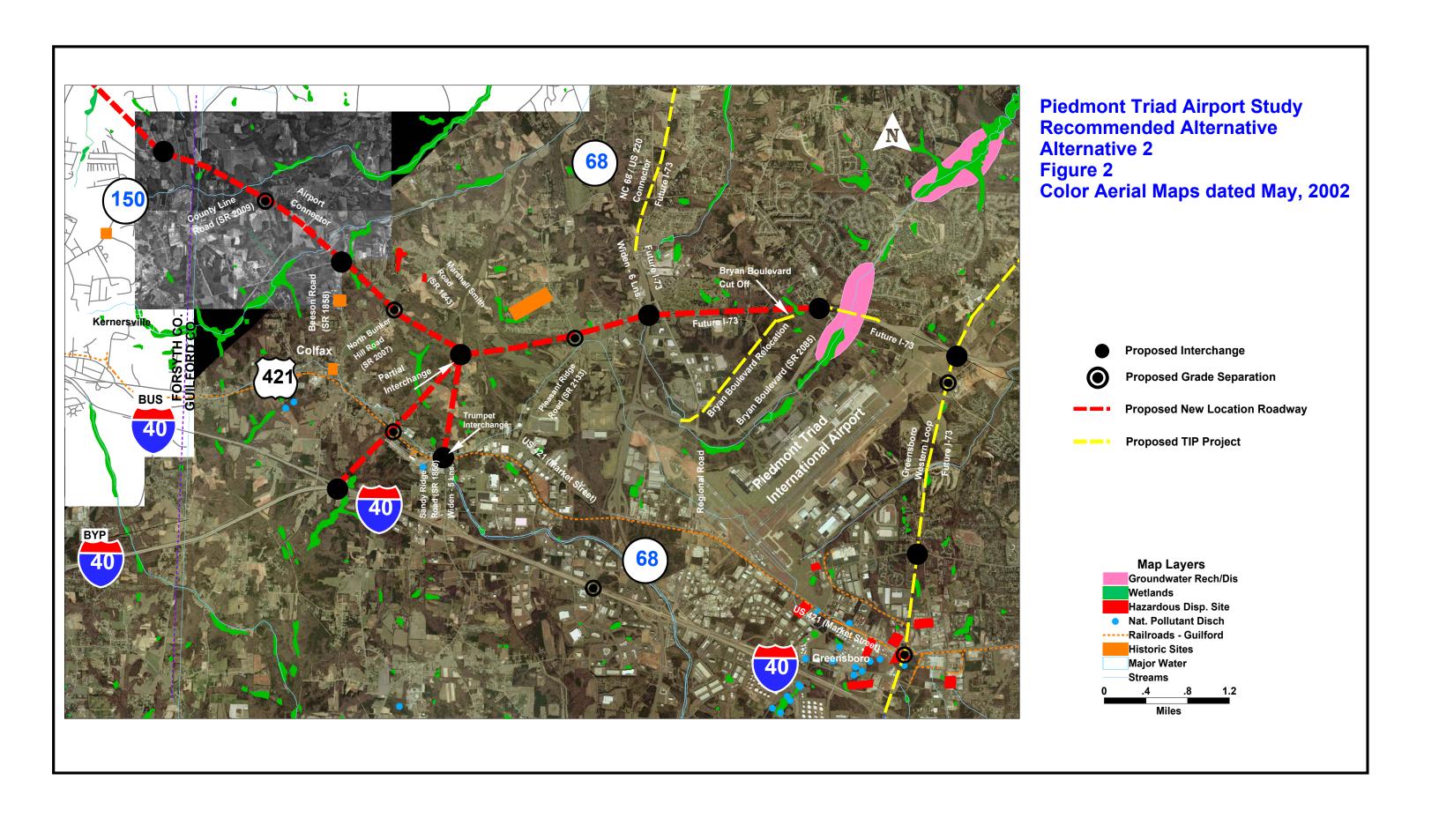
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Figure 1

Location Map



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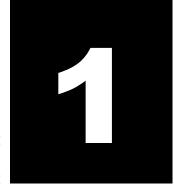
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Chapter 1 – RECOMMENDED TRANSPORTATION IMPROVEMENTS

Intent of the Airport Area Study

Transportation is the backbone of a region's economic vitality. Without an adequate transportation system people cannot easily reach their intended destination, goods cannot be delivered to market in a cost effective manner, and investors may look to invest in better served areas. Recent



trends such as regional economies, "just in time" delivery, increased automobile ownership, and increased migration away from the central cities and towns are taxing our existing transportation systems and requiring that we put more emphasis on planning for our transportation future.

The Piedmont Triad Airport Area Study is a joint effort by NCDOT, the Greensboro MPO, the High Point MPO, the Winston-Salem MPO, and the Piedmont Authority For Regional Transportation (PART). The transportation study uncovers the need for new transportation facilities. The plan is intended to provide the area with the necessary roadway improvements to satisfy the anticipated transportation needs until the year 2025. Due to the current rural nature of the area, bicycle and pedestrian modes of transportation were not considered in the development of this study. This plan identifies future transportation plan corridors, and it has yet to be reflected on any local Transportation Plan, with the exception of the Winston-Salem Thoroughfare Plan and 2025 Long-Range Transportation Plan. The Winston-Salem plans identify a future airport connector that ends at the Forsyth/Guilford County line.

The goals of this study (as reflected in the PART minutes dated August 2, 2000) are:

- 1. future routing of I-73
- 2. relocation of Bryan Boulevard and immediate access to the airport terminal
- 3. improved access from High Point to the airport
- 4. improved access from Forsyth County to the airport
- 5. access to the airport using public transportation

The traffic forecasts for the Piedmont Triad Airport Study were developed based upon the Triad travel demand model, which is based on population, employment, and travel trends in the area, as well as the area's anticipated growth. Future land use was developed and adopted by the local area for the future year (2025) scenarios. It is important to realize that the



The Travel Demand Model for the Triad is a replication of the travel patterns of the triad area. The projections to the future year (2025) are based on local growth projections. The model was used in estimating future traffic on the alternatives for this study.

plan is not a rigid set of proposals, but is intended to be flexible enough to account for



changes in future growth. If adopted as part of the Greensboro non-fiscally constrained Transportation Plan (formally called the Thoroughfare Plan), this plan should be reviewed regularly in order to re-evaluate the conditions in the area and to eliminate any possible adverse impacts of unnecessary transportation proposals. Also, the area may at any time request a re-evaluation of this plan if conditions are expected to change from those anticipated.

This chapter presents the Airport Study recommendations based on the ability of the existing transportation systems to serve present and future desires as the Piedmont Triad area continues to grow. It is the goal of this study to develop a transportation system that will serve the anticipated traffic and land development needs for the Piedmont Triad Airport area. Other goals will be to improve safety, air quality, promote growth and improve overall efficiency of the transportation network.

Study Recommendations

The process of developing, testing and evaluating alternate plans involved several

considerations. These included the goals and objectives of this study, identified deficiencies (see Chapter 3), environmental impacts, existing and anticipated land development, and travel services. Aerial photography, topographic mapping, field reconnaissance and discussion with local staff, officials, and interested local citizens provided additional basis for identifying and evaluating



Alternative 2 is the recommended alternative for this study.

recommendations of the Piedmont Triad Airport Area Study. Figure 3 shows the recommended roadway improvements for the study. Alternative 2 (see Chapter 6) is the recommended alternative, with a preliminary cost estimate of \$190,000,000.

I-40 / NC 68 /I-73 Connector - Purpose and Need

- Project recommendation: It is recommended that a new location six lane divided freeway be constructed between NC 68 and the proposed Bryan Boulevard relocation. The freeway should start at the existing I-40 / I-40 Business interchange, cross US 421 (Market Street) with a grade separation, connect to NC 68 with an interchange, and extend to the proposed Bryan Boulevard Relocation / Old Oak Ridge Road (SR 2137) interchange (TIP U-2815). This route will provide travelers that desire to go north of Greensboro from the High Point or Winston Salem areas a more direct route to the Greensboro Western Loop (U-2524).
- **Transportation Demand:** This route will improve east-west travel in the airport area, and provide a more direct route to the Greensboro Western Loop, US 220, and US 29. The 2025 Traffic on this route is anticipated to be



between 47,000 (closer to I-40) and 70,000 vpd (vehicles per day) (closer to Bryan Boulevard).

Capacity: This route will help alleviate anticipated capacity problems in and near I-40, and NC 68, and the I-40 / NC 68 interchange. It will also greatly improve east-west travel in the airport area and the western part of Guilford County. This route is anticipated to reduce the

Capacity

The number of vehicles that can travel on a road and still experience efficient travel.

traffic on I-40 between I-40 Business and the Western Urban Loop by approximately 30,000 vpd (vehicles per day) in 2025.

- **Safety Issues:** The construction of this project will decrease congestion and delays on I-40 and NC 68 that may result in the future on existing roadways. The construction of this project is also needed to provide better highway transportation for the surrounding MPOs of Greensboro, High Point, and Winston-Salem.
- Social Demands/Economic Development: The I-40 / NC 68 / I-73 connector project should have a positive impact on economic development, and improve automobile transportation in the western Guilford County area.
- **System Linkage:** This project will more directly connect from I-40 / I-40 Business to the northern travel desires on the Western Urban Loop such as US 220 and US 29, and NC 68. This project will also give a more direct route to the Piedmont Triad International Airport.
- Relationship to Other Plans: At press time, this project was not included on the Greensboro Urban Area Thoroughfare Plan or the 2001 Greensboro Long-Range Transportation Plan. The eastern terminus of this project is the Bryan Boulevard Relocation, which is included in the Transportation 2004-2010 **Improvement** Program as project R-2815 and is scheduled to begin construction in 2003.
- **I-73 Information:** A section of this project between NC 68 and the proposed Bryan proposed to Boulevard Relocation is be designated as a part of the I-73 corridor. Currently, I-73 will travel along the NC 68 - US 220 Connector (TIP Project R-2413), and take Bryan Boulevard to the Western Greensboro Loop (TIP Project U-2524).

Transportation Improvement Program

Contains funding information and schedules for transportation projects. Commonly referred to as the TIP.

Transportation Improvement Program

The latest TIP with project maps can be found at: http://www.ncdot.org/planning/ development/TIP/



Section 330(a) of the National Highway System Designation Act of 1995 has identified I-73/I-74 as a high priority corridor. The act states that in North Carolina, the I-73 corridor shall generally follow US 220 from the Virginia State line to NC 68 in the vicinity of Greensboro. These highways will extend from Detroit, Michigan, and Rock Island, Illinois, through North Carolina to Charleston, South Carolina. Section 330(b) of the Act designates I-73/I-74 as a future part of the interstate system.

• **Modal Relationships:** This project will also give a more direct route to the Piedmont Triad International Airport.

Sandy Ridge Road (SR 1850) Extension - Purpose and Need

- Project recommendation: It is recommended that a new location four lane divided expressway be constructed between US 421 (Market Street) and the proposed I-40 / NC 68 / I-73 connector (see above). This route will provide travelers on US 421 (Market Street) and High Point access to the I-40 / NC 68 / I-73 connector, and in conjunction with the Airport Connector (see below), improved access to the Airport Area and Forsyth County.
- **Transportation Demand:** In conjunction with the I-40 / NC 68 / I-73 connector, this route will improve east-west travel in the airport area, and provide a more direct route to the Greensboro Western Loop, US 220, and US 29. The 2025 Traffic on this route is anticipated to be approximately 21,000 vpd.
- **Capacity:** In conjunction with the I-40 / NC 68 / I-73 connector, this route will help alleviate anticipated capacity problems in and near I-40, and NC 68, and the I-40 / NC 68 interchange. It will also greatly improve east-west travel in the airport area and the western part of Guilford County.
- **Safety Issues:** In conjunction with the I-40 / NC 68 / I-73 connector, the construction of this project will decrease congestion and delays on I-40 and NC 68 that may result in the future on existing roadways. The construction of this project is also needed to provide better highway transportation for the surrounding MPOs of Greensboro, High Point, and Winston-Salem.

The intersection of Sandy Ridge Road (SR 1850) and US 421 (Market Street) is near a crossing with the Norfolk Southern Railroad, which runs roughly parallel to US 421 (Market Street). A safety concern is the conflict with vehicular and train traffic as the traffic increases on Sandy Ridge Road (SR 1850). This railway carries three trains per day at an average speed of



approximately 35 miles per hour. Careful consideration of the railroad facilities must be considered at this intersection. A trumpet interchange will be needed at this intersection to help grade separate the railroad and conflicting vehicular traffic.

- Social Demands/Economic Development: In conjunction with the other recommendations in this report, the extension connector project should have a positive impact on economic development, and improve automobile transportation in the western Guilford County and High Point area. It will help facilitate faster travel to the airport.
- **System Linkage:** This will more directly connect from I-40 / I-40 Business to the northern travel desires on the Western Urban Loop such as US 220 and US 29, and NC 68. This project will also give a more direct route to the Piedmont Triad International Airport from western US 421 (Market Street) and High Point.
- **Relationship to Other Plans:** At press time, this project was not included on the Greensboro Urban Area Thoroughfare Plan or the 2001 Greensboro Long-Range Transportation Plan.
- **Modal Relationships:** In conjunction with the I-40 / NC 68 / I-73 connector, this project will also give a more direct route to the Piedmont Triad International Airport.

Airport Connector - Purpose and Need

- Project recommendation: It is recommended that a new location four lane divided freeway be constructed between NC 150 (in Forsyth County) and the proposed I-40 / NC 68 / I-73 connector (see above). This route will provide travelers on Market Street and Winston-Salem access to the I-40/NC 68/I-73 connector, and improve access to the Airport Area and northern Greensboro.
- **Transportation Demand:** This route will improve east-west travel in the airport area, and provide a more direct route to the Greensboro Western Loop and Northern Kernersville. The 2025 Traffic on this route is anticipated to be approximately 24,000 vpd.
- **Capacity:** This route will help alleviate anticipated capacity problems in and near I-40, and NC 68, and the I-40 / NC 68 interchange. It will also greatly improve east-west travel in the airport area and the western part of Guilford County, and the eastern part of Forsyth County.

13



- Safety Issues: The construction of this project will decrease congestion and delays on I-40 and NC 68 that may result in the future on existing roadways. The construction of this project is also needed to provide better highway transportation for the surrounding MPOs of Greensboro, High Point, and Winston-Salem.
- Social Demands/Economic Development: In conjunction with the other recommendations in this report, the Airport Connector project should have a positive impact on economic development, and improve automobile transportation in the western Guilford County area and eastern Forsyth County.
- **System Linkage:** This will more directly connect from I-40 / I-40 Business to the northern travel desires on the Western Urban Loop such as US 220 and US 29, and NC 68. This project will also give a more direct route to the Piedmont Triad International Airport from eastern Forsyth County.
- Relationship to Other Plans: At press time, this project was not included on the Greensboro Urban Area Thoroughfare Plan or the 2001 Greensboro Long-Range Transportation Plan. The portion of the Airport Connector between NC 150 and the Guilford County Line is included on both the Winston-Salem Long-Range Transportation Plan and Thoroughfare Plan.
- **Modal Relationships: This** project will also give a more direct route to the Piedmont Triad International Airport.

Other Recommendations

- **Sandy Ridge Road (SR 1850) Widening:** To improve safety and capacity, it is recommended to widen Sandy Ridge Road to a multilane facility, preferably 4 lane divided or 5 lanes. Some nearby homes to the roadway may cause some relocations if this project is implemented. The 2025 estimated ADT is 19,000. This project is not included in the 2001 Greensboro Urban Area Long-Range Transportation Plan.
- **Pegg to Thatcher Connector:** One project on the 2001 Greensboro Urban Area Long Range Transportation Plan is to connect Pegg Road and Thatcher Roads with a bridge over I-40, to help facilitate local traffic movements. This bridge would be west of the existing NC 68 / I-40 interchange. Due to the expense of improving the I-40/NC 68 interchange, this project is a unique way to divert some of the traffic from using that interchange.



Deletions from Greensboro LRTP

These projects are proposed to be deleted from the Greensboro Long-Range Transportation Plan and non-fiscally constrained Transportation Plan (formally called the thoroughfare plan) as a result of the Piedmont Triad Airport Study.

- Sandy Ridge Road (SR 1850) Connector: This project was proposed to connect Sandy Ridge Road (SR 1850) to Pleasant Ridge Road (SR 2133). An early alternative indicated that this concept would overload Pleasant Ridge Road (SR 2133) by the year 2025 as traffic tries to avoid the I-40 / NC 68 interchange. Sandy Ridge Road (SR 1850) and Pleasant Ridge Road (SR 2133) would partially function as the I-40 / NC 68 / I-73 connector if this project is implemented. Due to the unacceptable level of service on Pleasant Ridge Road (SR 1850) that is caused by this project, this connector is recommended to be dropped from both local transportation plans.
- **Airport Parkway Extension:** This project was proposed to connect Brian Boulevard (SR 1850) to Pleasant Ridge Road (SR 2133). With the implementation of the other proposals in this chapter, this project appears to have little value to the overall transportation system in the area. With the other surrounding improvements added to the thoroughfare plan, the Airport Parkway Extension is recommended to be dropped from local transportation plans.

15



Phasing of the construction projects

Due to the expenses of construction, large projects are often broken down into separate sections for construction. The construction of the new location facilities of the airport study is proposed to be phased and constructed when transportation congestion and delays are unacceptable. During the study process, the committee requested that a proposed construction phasing plan be added to the documentation of this study.

The I-40 / NC 68 / I-73 connector is recommended to be divided into 3 parts:

- Section A between NC 68 and the Brian Boulevard Relocation
- Section B between Sandy Ridge Road Extension and NC 68
- Section C between I-40 Business and the proposed Sandy Ridge Road Extension

This is the proposed phasing of construction of the major airport area transportation projects.

- Phase 1 construction of Section A of the I-40 / NC 68 / I-73 corridor. This will facilitate traffic on the I-73 corridor and cut down on travel time for I-73 motorists.
- Phase 2 construction of the Sandy Ridge Road Extension and section B of the I-40 / NC 68 / I-73 connector. This will relieve some of the I-40 / NC 68 interchange congestion.
- Phase 3 construction of section C of the I-40 / NC 68 / I-73 connector. This will give traffic direct from Winston Salem and High Point direct access to the northern. The process of reconstructing the I-40 Business / I-40 interchange to accommodate the additional movement will challenging.
- Phase 4 complete the airport connector from the Sandy Ridge Road Extension to Forsyth County. This will give northern Forsyth County direct access to the airport area and northern Greensboro without having to travel a highly congested I-40.



Chapter 2 – ANALYSIS OF EXISTING ROADWAY SYSTEM

This chapter presents an analysis of the ability of the existing street system to serve the area's travel desires. Emphasis is placed not only on detecting the deficiencies, but also on understanding their cause. Travel deficiencies may be localized and the result of substandard highway design, inadequate pavement width, or intersection controls. Alternately, the underlying problem may be caused by a



system deficiency such as a need for a bypass, loop facility, construction of missing links, or additional radials.

An analysis of the roadway system must first look at existing travel patterns and identify existing deficiencies. This includes roadway capacity and safety analysis. After the existing picture of travel in the area has been developed, the engineer must analyze factors that will impact the future system. These factors include forecasted population growth, economic development potential, and land use trends. This information will be used to determine future deficiencies in the transportation system.

Study Area

The study area, as illustrated in Figure 2, is located in the western part of Greensboro / Guilford County, and a portion of western Forsyth County. Most of the land in the study area is relatively open and rural, with scattered residential use east of NC 68 and more commercial development located around US 421 (Market Street) and PTIA. The Norfolk Southern Railroad runs roughly parallel to US 421 (Market Street), and has an at-grade intersection on Sandy Ridge Road (SR 1850). The study area includes I-40, I-40 Business, NC 68, and Bryan Boulevard. The Piedmont Triad International Airport (PTIA) is located on the north side of US 421 (Market Street), and east of NC 68.



Existing Facilities

The following is a description of the major facilities in the study area.

- **I-40** runs roughly east-west through the study area and is a primary carrier of through traffic. It is a four lane divided facility, but it is currently being upgraded to six or eight lanes with project I-2201, which should be complete in 2003. I-40 is a controlled access facility with interchanges with Business 40, Sandy Ridge Road (SR 1850), and NC 68. It is classified as a major thoroughfare on the Greensboro Urban Area Thoroughfare Plan. (See Figure 3 for the Greensboro Thoroughfare Plan).
- **US 421 (Market Street)** is roughly parallel to I-40 and serves adjacent commercial and residential land use, with no control of access. The cross section of US 421 (Market Street) ranges between 2 and 5 lanes. It is classified as a major thoroughfare on the Greensboro Urban Area Thoroughfare Plan.
- NC 68 is a north-south facility that connects Rockingham County and the City of High Point with I-40. It includes interchanges with US 421 (Market Street), Bryan Boulevard (SR 2085), and I-40. There are some other at-grade intersections on NC68, mostly north of Bryan Boulevard (SR 2085), NC 68 is partially access controlled and four lane divided south of Bryan Boulevard (SR 2085). It is classified as a major thoroughfare on the Greensboro and High Point Urban Area Thoroughfare Plans.
- Bryan Boulevard (SR 2085) is a partially access controlled facility that connects
 Greensboro with the airport area and NC 68. It includes interchanges with US 421
 (Market Street), Bryan Boulevard (SR 2085), and I-40. There are some other atgrade intersections on NC 68, mostly north of Bryan Boulevard (SR 2085). NC 68 is partially access controlled and four lane divided south of Bryan Boulevard (SR 2085). It is classified as a major thoroughfare on the Greensboro Urban Area Thoroughfare Plan.
- Sandy Ridge Road (SR 1850) is a two-lane facility with no access control (in the study area). In conjunction with Johnston Street, this facility connects US 421 and I-40 to downtown High Point. A problem with this roadway is that the Norfolk Southern Railroad operates very close to the intersection of Sandy Ridge Road (SR 1850) and US 421 (Market Street). At some times, backups occur during train crossings. Some officials have expressed a desire to grade separate the railway and Sandy Ridge Road (SR 1850) to improve safety and capacity.

18



Twenty-four (24) hour average daily traffic counts were obtained by NCDOT. These counts were used to establish traffic conditions in the study area. Traffic Data is shown in Figure 3, and based on 1999 and 2000 ADT.

Traffic Count Data

Traffic count data can be found at http://www.ncdot.org/planning/statewide/gis/DataDist/GISTrafSurvMaps.html

The Norfolk Southern Railroad operates a railway that runs roughly parallel to US 421 (Market Street). This railway carries three trains per day at an average speed of approximately 35 miles per hour.

Due to backups on Sandy Ridge Road (SR 1850) and US 421 (Market Street) during a crossing, some officials have expressed a desire to grade separate the railway and Sandy Ridge Road (SR 1850).

Programmed Transportation Projects

There are five major transportation projects in the draft *NCDOT 2004-2010 Transportation Improvement Program* in the immediate vicinity of the study area that are expected to significantly impact traffic patterns in future years. These projects are described as the following:

- U-2815 Bryan Boulevard Relocation Relocate Bryan Boulevard west of the third runway at PTIA. Four lane divided, control of access. Construction in 2003.
- U-4015 Gallimore Dairy Road (SR 1556) Widen from NC 68 to Market Street. Construction on segments begins in 2004.
- U-4408 NC 68 at Triad Center Drive construct interchange (construction should begin in 2007)
- R-2413 NC 68 / US 220 Connector construct a new 4 lane divided facility from NC 68 (Near Edgefield Road (SR 2011)) to US 220. Construction on some sections begins in 2004.
- U-4433 NC 68 Widening Widen to 6 lanes from Gallimore Dairy Road (SR 1556) to US 421 (Market Street) Interchange. This project is under construction.
- U-2524 Western Urban Loop Construct a freeway- around Greensboro. This project is under construction.
- R-2611 US 421 (Market Street) widen to multi lanes from Colfax to NC 68.
 Construction to begin in 2009.
- I-2201 I-40 Widening Under construction and scheduled to be complete in 2003

Since each of these projects are funded, and it is assumed they will be in place by 2025.



Non - Programmed Transportation Projects

There are three major transportation projects in the *2025 Greensboro Long Range Transportation Plan (2001)* (LRTP) in the immediate vicinity of the study area that are expected to significantly impact traffic patterns in future years. These projects are described as the following:

- Sandy Ridge Road Connector Between I-40 and Pleasant Ridge Road new location, 5 lanes. (LRTP Project #B30).
- Pegg to Thatcher Connection Connector Road over I-40 (LRTP Project #B33)

Thoroughfare Plans

Thoroughfare Plans are a tool to aid officials in the development of an appropriate street system. It is important that the MPOs within the Triad area continue their cooperation as a team in the development of this transportation system. Plan development and implementation jointly undertaken will help ensure the development of an efficient system for travel throughout the Triad Area. Thoroughfare Plans are not fiscally constrained and may identify current and long-range projects.

Note: Due to recent revisions in state law, NCDOT and the MPOs are in a transition from a thoroughfare plan to a multimodal transportation plan, which is not fiscally constrained.

An MPO Long-Range Transportation Plan is fiscally constrained. Therefore, only those thoroughfare plan elements that can reasonably be expected to be funded within the planning period are included in the Long-Range Transportation Plan (LRTP). An LRTP can cover all modes of transportation.

- Greensboro Thoroughfare Plan For the thoroughfare plan map dated June 28, 1996, the latest MPO update was on February 20, 2002, and the latest North Carolina Board of Transportation update was on October 3, 2002. The last Greensboro Long-Range Transportation Plan is dated October 1, 2001.
- High Point Thoroughfare Plan For the map dated 2001, the latest adoption by the TAC was on September 25, 2001, and by the North Carolina Board of Transportation on November 8, 2001. The last High Point Long-Range Transportation Plan is dated October 1, 2001.
- Winston-Salem Thoroughfare Plan For the map dated 2002, the latest adoption by the TAC was on February 28, 2002 and by the North Carolina Board of Transportation on June 6, 2002. The last Winston-Salem Long Range Transportation Plan is dated March 1, 2002.



Capacity Analysis of the Existing System

An indication of the adequacy of the existing street system is a comparison of traffic volumes versus the ability of the streets to move traffic freely at a desirable speed. The ability of a street to move traffic freely, safely, and efficiently with a minimum delay is controlled primarily by the spacing of the major devices utilized. Thus, the ability of a street to move traffic can be increased by restricting parking and turning movements, using proper sign and signal devices, and by the application of other traffic engineering strategies.

Capacity is the maximum number of vehicles which has a "reasonable expectation" of passing over a given section of a roadway, during a given time period under prevailing roadway and traffic conditions. The relationship of traffic volumes to the capacity of the roadway will determine the level of service (LOS) being provided. Six levels of service have been selected for analysis purposes. They

Level of Service

Level of Service information can be found in the latest copy of the Highway Capacity Manual.

are given letter designations from A to F with LOS A representing the best operating conditions and LOS F the worst.

Given a do-nothing scenario, with NONE of the projects listed in Recommendations Chapter implemented (and other transportation plan projects listed in the Greensboro, High Point, and Winston-Salem Long Range Transportation Plans implemented and constructed), the following roadways are anticipated to be over capacity in the year 2025 (in the study area)

- I-40
- I-40 Business
- NC 68
- Sandy Ridge Road (SR 1850)

The following roadways are anticipated to be near capacity (80-100% of practical capacity) by the design year

- Bryan Boulevard (relocated)
- Pleasant Ridge Road (SR 2133)
- Regional Road
- Crosscreek Road (SR 2001)



Traffic Crashes

Traffic crashes are often used as an indicator for locating congestion problems. Traffic accident records can also be reviewed to identify problem locations or deficiencies such as poor design, inadequate signing, ineffective parking, or poor sight distance. Accident patterns developed from analysis of accident data can lead to improvements that will reduce the number of accidents.

Traffic crashes were considered in the development of this plan. The recommendations presented in Chapter 2 will reduce congestion on major routes such as I-40 and NC 68. This congestion reduction should reduce traffic accidents.

The High Accident Intersections for Guilford County in the study area between January 1, 2000 and April 30, 2002, with at least 25 accidents are noted below.

The intersection of I-40 / NC 68 had 73 accidents

- Rear End, Slow or Stop (43)
- Angle (8)
- Sideswipe, Same Direction (7)
- Ran off Road, Left (5)
- Others (Less than 5 occurances per type) (11)

The intersection of I-40 / Sandy Ridge Road had 45 accidents

- Rear End, Slow or Stop (23)
- Angle (8)
- Others (Less than 5 occurances per type) (14)

The intersection of Friendly / Market Street had 38 accidents

- Angle (12)
- Rear End, Slow or Stop (8)
- Left Turn, Same Roadway (6)
- Others (Less than 5 occurances per type) (12)

The intersection of I-40 / Chimney Rock had 35 accidents

- Rear End, Slow or Stop (23)
- Others (Less than 5 occurances per type) (12)

The intersection of I-40 / I-40 had 25 accidents

- Rear End, Slow or Stop (14)
- Others (Less than 5 occurances per type) (11)

The accident data provided above is from an NCDOT Accident Summary Report.



Chapter 3 – FACTORS AFFECTING THE FUTURE ROADWAY SYSTEM

The objective of this Airport Area Study is to develop a transportation system that will meet future travel demand and enable people and goods to travel safely and economically. To determine the needs of an area it is important to understand the role of population, economics, and land use have on the highway system. Examination of these factors helps to explain historic travel patterns and lays the groundwork for transportation planning.



In order to formulate an adequate year 2025 transportation plan, reliable forecasts of future travel characteristics must be achieved. The factors of population, vehicle usage trends, economy and land use play a significant role in determining the transportation needs of the area, and must be carefully analyzed.

The first step in the development of this study is to define the planning period and the planning area. The planning period is typically on the order of 30 years. The base year for the Triad Travel Demand model was 1994, and the future year forecasts were for 2025. For the purposes of this study 2000 traffic counts served as base year data, and the 2025 fiscally constrained long range transportation plan served as the future year model network.

Project Assumptions

Some of the major assumptions of the Piedmont Triad Area Airport Study are outlined below. These assumptions are:

- I-73 will travel down the US-220 / NC 68 Connector (R-2413). This project is expected to be constructed after 2008 and was assumed to carry the future I-73 traffic. The construction of I-73 is needed to improve north-south highway transportation from Detroit, Michigan to Charleston, South Carolina.
- Federal Express will be in place at the Piedmont Triad International Airport. The additional traffic of the Federal Express hub has necessitated the relocation of Bryan Boulevard (SR 2085) (TIP Project U-2815). Construction should begin in 2003.



- Winston-Salem has identified a "Regional Airport Connector" that is currently on their adopted thoroughfare plan. This connector ties into their Outer Loop and crosses the Forysth / Guilford County line south of where NC 150 crosses the Guilford County line. Greensboro does not currently have the Regional Airport Connector on their mutually adopted thoroughfare plan. The Winston-Salem and Greensboro Thoroughfare Plans do not match with this project. Any future roads will consider the Forsyth portion of the "Regional Airport Connector" to be constructed.
- The City of High Point would like to improve access to the Piedmont Triad International Airport (PTIA). Concerns have been raised by High Point officials about this matter.
- All projects on the Greensboro, High Point, and Winston-Salem Long-Range Transportation Plans are in place by 2025.
- There is a major travel desire between Business I-40 and the Greensboro Western Loop.

Land Use Scenario

Triad Travel Demand Model.

The amount of traffic on a section of roadway is a function of the size and location of the population that it serves. The future year traffic projections for the Airport Study were taken from various model runs using the Triad Travel Demand Model, with a future year of 2025.

Development and Evaluation of Land Use Scenarios.

Trend Land Use Scenario

This land use scenario, which assumes "business as usual" growth was used for the future year transportation forecasts.

As with any future year model, projections are needed.

Socioeconomic Data Projections for the Triad Travel

Demand Model were developed through a multi-step process, which is outlined in detail in the report *Piedmont Triad Regional Travel Demand Model Technical Report #2:*

The Trend Line Land Use Scenario, which assumes "business as usual" approach to growth in the Triad Region was used. It assumes continued expansion of low-density, auto-oriented, segregated development into rural areas. The above mentioned report outlines in detail the number of households and employment distributed throughout the



Chapter 4 – PRELIMINARY ALTERNATIVES

Identified Alternatives

The intent of this study is to identify feasible and costeffective transportation alternatives which can safely and efficiently meet the identified future transportation needs of the study area, and which should be considered for inclusion in the next Greensboro Urban Area Thoroughfare Plan. This



section discusses these alternatives. These alternatives were considered, and then narrowed down to four and "tweaked" to be presented to the public.

The meeting to discuss all of these alternatives was held on October 2, 2002. The committee decided to present to the public four alternatives: E, G, I, and L (discussed below) and the no-build scenario. The others alternatives were dropped. The public meeting was held on November 14, 2002, and a summary of the findings can be found in Chapter 7.

A goal of the airport study was to improve access to the airport using public transportation. Besides the no Build scenario, all the alternatives improve the opportunities for public transportation.

No Build or "Do Nothing" Alternative

There is always the option for the "do nothing" and leave the existing roadway facilities as they are. While this alternative does not incur design and construction cost, it is costly in that it will not alleviate the projected traffic congestion and safety deficiencies. If no improvements are made to the Piedmont Triad Airport area, then the existing facilities will likely have congestion delays. Given the projected level of congestion and existing traffic safety deficiencies, this approach is not recommended.

Alternative A

This alternative investigated the existing Greensboro Long-Range Transportation Plan and current Greensboro Urban Area Thoroughfare Plan. It was quickly decided that the existing Greensboro thoroughfare plan projects would not provide sufficient congestion relief for the airport area, so this alternative was not considered.

This alternative investigated extending the Airport Connector on the Winston-Salem Thoroughfare Plan and connecting to Brian Boulevard near the proposed Old Oak Ridge



Road / Bryan Boulevard interchange. The proposed Sandy Ridge Road location would connect Pleasant Ridge Road (SR 2133) to the Sandy Ridge Road / I-40 interchange.

Advantages

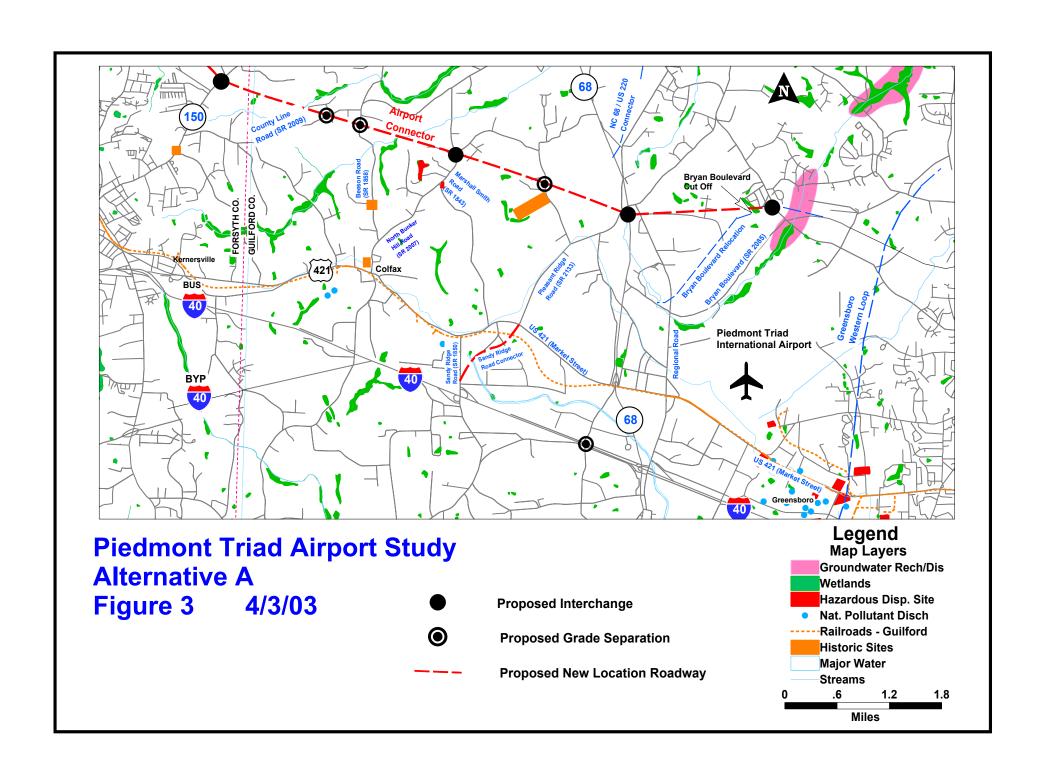
- Uses some existing thoroughfare plan alignments
- Would relieve I-40 and NC 68 congestion.
- Provides access to US 421 (Market Street).
- Least amount of wetland impacts of any alternative (see Chapter 6)
- Tied for lowest wetlands impacts of any alternative (see Chapter 6)
- Requires the lowest number of new interchanges and grade separations of any studied alternative

Disadvantages

- Funnels through traffic on Pleasant Ridge Road (SR 2133), as motorists attempt to avoid the busy I-40 / NC 68 interchange. This alternative would require widening of Pleasant Ridge Road (SR 2133).
- Does not relieve traffic congestion as much as some other alternatives.
- Would require "cutting off" the relocated Brian Boulevard.
- Provides for an at-grade intersection of the Norfolk Southern Railroad which will be difficult to implement.

This alternative was presented to the Airport Committee on October 26, 2000. This alternative was not chosen due to the possible widening of Pleasant Ridge Road (SR 2133). It was quickly decided that the existing Greensboro thoroughfare plan projects would not provide sufficient congestion relief for the airport area, so this alternative was dropped. See Figure 3 for a map of Alternative A.

Table 1 - Alternative A Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Connector	0.20	5	5 lane urban	37,900
Sandy Ridge Road Connector	0.97	5	5 lane urban	27,200
Airport Connector				
NC 150 - North Bunker Hill Road	2.84	4	4 lane freeway	24,200
North Bunker Hill Road - NC 68	2.09	4	4 lane freeway	24,200
Pleasant Ridge Road (SR 2133)				
Market Street - Airport Conn.	1.95	4	4 lane urban div.	35,700
170 0	1.00		0.1	04.000
I-73 Connector	1.66	6	6 lane freeway	64,600





Back of Figure 3



Alternative B

This alternative is a variation of Alternative A, but it connects the I-40 / Business 40 split to the Airport Connector via a four lane divided freeway. The I-40 Business Extension would be grade separated over US 421 (Market Street). A separate facility, the Sandy Ridge Road Extension would provide access to US 421 (Market Street).

Advantages

- Would relieve I-40 and NC 68 congestion.
- This alternative is tied with 2 other alternatives for the lowest wetland impacts (see Chapter 6)

Disadvantages

- The I-40 Business Extension / Airport Connector interchange is too far west since the I-40 to northern Greensboro is the dominant traffic movement.
- Does not alleviate exposures to railroad traffic on Sandy Ridge Road (SR 1850).
- Would require "cutting off" the relocated Brian Boulevard.

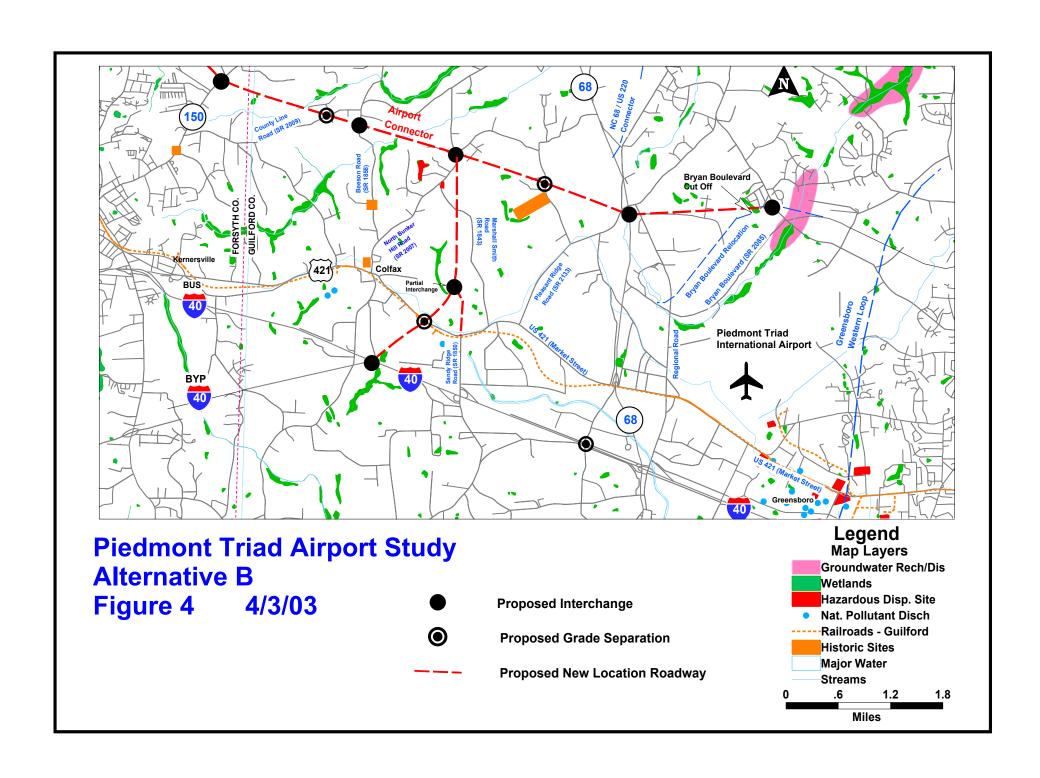
This alternative was presented to the Airport Committee on October 26, 2000. This alternative was not chosen because another similar alternative was preferred that moves the I-40 Business Extension / Airport Connector interchange east. See Figure 4 for a map of Alternative B. The awkward configuration made this alternative less attractive than the other alternatives and this alternative was dropped.

A complete list of environmental impacts can be found in Chapter 6.

Table 2 - Alternative B Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	5	5 lane urban	11,100
Extension to I-40 Business Ext.	0.60	2	2 lane urban	4,500
Airport Connector				
NC 150 - North Bunker Hill Road	1.68	4	4 lane freeway	22,100
North Bunker Hill Road - I-40 Ext.	1.15	4	4 lane freeway	22,100
I-40 Extension - NC 68	2.21	6	6 lane freeway	54,800
I-40 Business Extension				
I-40 - Sandy Ridge Road Ext.	1.31	4	4 lane urban div.	35,100
Sandy Ridge Ext Airport Connec.	1.52	4	4 lane urban div.	36,100
I-73 Connector	1.66	6	6 lane freeway	65,800

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Back of Figure 4

32



Alternative C

This alternative investigated extending the Airport Connector on the Winston-Salem Thoroughfare Plan and connecting to Brian Boulevard near the proposed Old Oak Ridge Road / Bryan Boulevard interchange. The proposed Sandy Ridge Road Extension would connect a relocated US 421 (Market Street) to the Airport Connector.

Advantages

- Relocates a portion of US 421 (Market Street) and relieves some congestion on the existing corridor.
- Would relieve I-40 and NC 68 congestion.
- This alternative ties with 2 other alternatives for the lowest wetland impacts (See Chapter 6).

Disadvantages

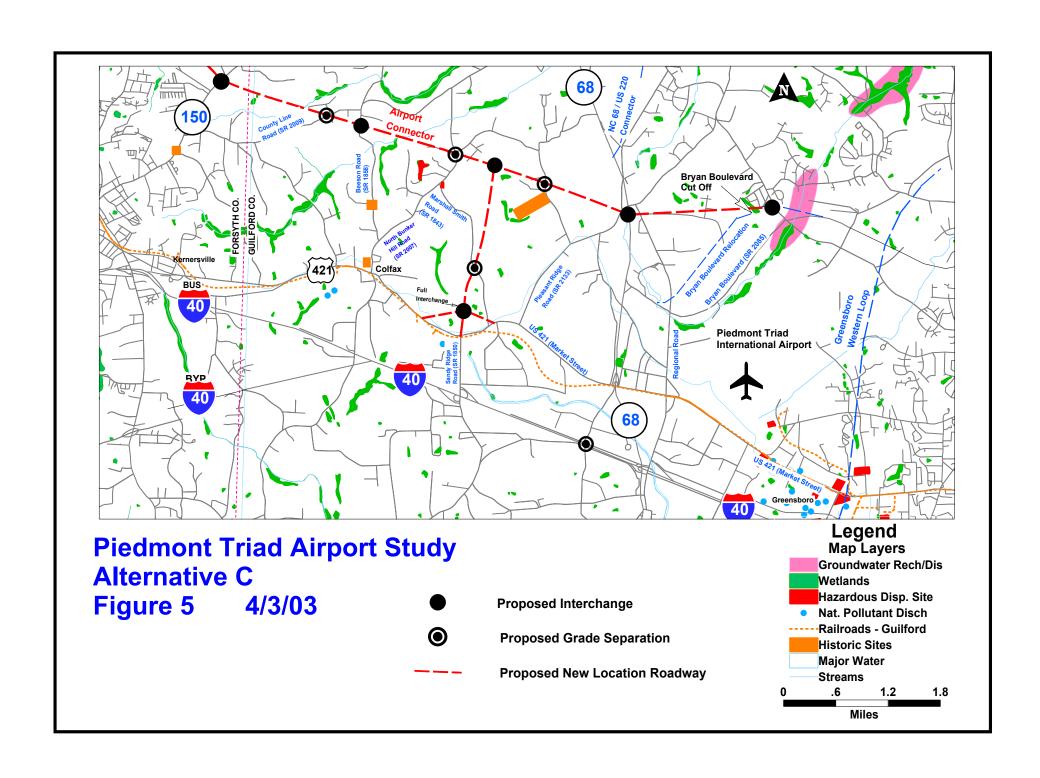
- Would require "cutting off" the relocated Brian Boulevard.
- Does not limit exposures to railroad traffic on Sandy Ridge Road (SR 1850).
- Would require widening Sandy Ridge Road (SR 1850) and would stress the Sandy Ridge Road (SR 1850) interchange.
- Close proximity of the interchange with the relocated Market Street and the existing US 421 (Market Street) intersection.

This alternative was presented to the Airport Committee on October 26, 2000. This alternative was not chosen because of the widening of Sandy Ridge Road (SR 1850). See Figure 5 for a map of Alternative C.

Table 3 - Alternative C Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	5	5 lane urban	26,100
Extension to Market Street Rel.	0.31	4	4 lane exprwy	22,000
Market Street Rel Airport Conn.	1.71	4	4 lane freeway	21,300
Airport Connector				
NC 150 - Beeson Road	1.70	4	4 lane freeway	36,200
Beeson Road - Sandy Ridge Ext.	1.61	4	4 lane freeway	36,200
Sandy Ridge Ext NC 68	1.63	6	6 lane freeway	49,600
Market Street Relocation				
Eastern Section	0.49	5	5 lane urban	16,100
Western Section	0.42	5	5 lane urban	11,400
I-73 Connector	1.66	6	6 lane freeway	61,900

Piedmont Triad Airport Area Transportation Study April 15, 2003

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Alternative D

This alternative investigated extending the Airport Connector on the Winston-Salem Thoroughfare Plan and connecting to Brian Boulevard near the proposed Old Oak Ridge Road / Bryan Boulevard interchange. The proposed I-40 Extension would connect to the I-40 / I-40 Business split. Market Street would be accessed through a connector to an interchange on the I-40 Extension.

Advantages

- Would relieve I-40 and NC 68 congestion.
- Eliminates exposures to railroad traffic on Sandy Ridge Road (SR 1850).

Disadvantages

- Would require "cutting off" the relocated Brian Boulevard.
- Traffic on Sandy Ridge Road will have to go "out of the way" to access US 421 (Market Street).
- Has the most wetland impacts to any alternatives (see Chapter 6)

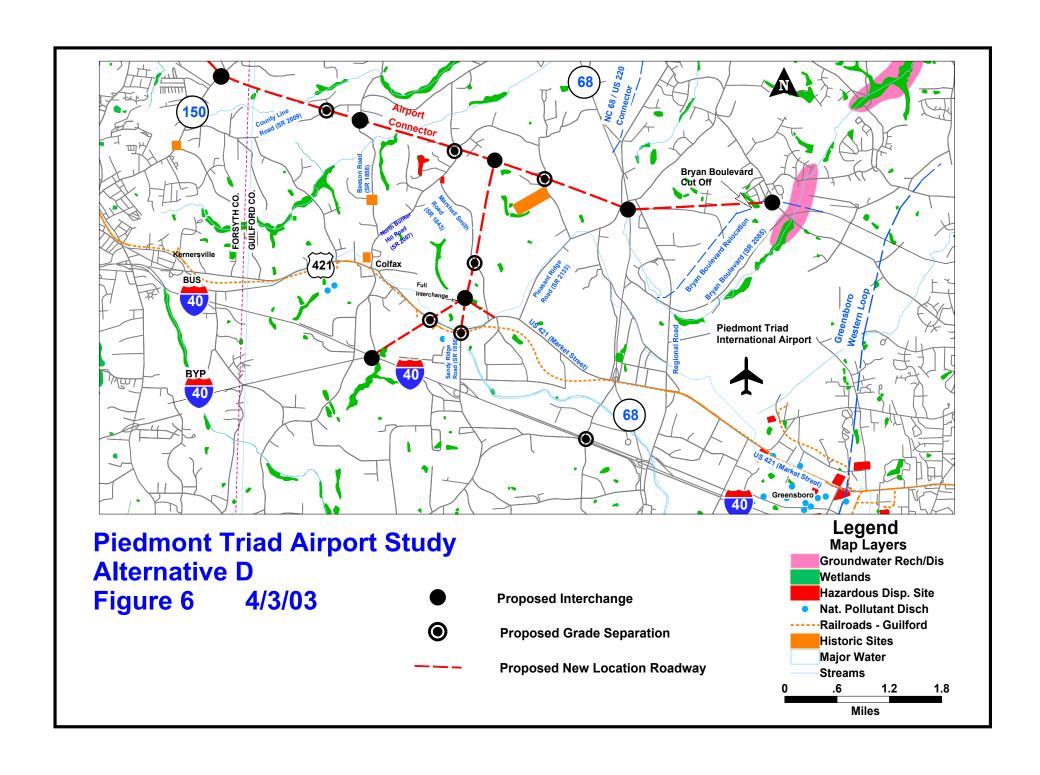
This alternative was presented to the Airport Committee on October 26, 2000.

The amount of wetland impacts in comparison to other alternatives makes this alternative doubtful to be permitted. This alternative also creates an awkward movement for traffic on Sandy Ridge Road (SR 1850) that desires to go to US 421 (Market Street).

This alternative was not chosen because other alternatives were more appealing. See Figure 6 for a map of Alternative D.



Table 4 - Alternative D Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	3	3 lane urban	12,000
Market Street Rel Airport Conn.	0.42	3	3 lane urban	12,000
Airport Connector				
NC 150 - Beeson Road	1.70	4	4 lane freeway	21,800
Beeson Road - Sandy Ridge Ext.	1.61	4	4 lane freeway	21,800
Sandy Ridge Ext NC 68	1.63	6	6 lane freeway	54,100
Market Street Relocation				
Market Street - I-40 Bus. Ext.	0.4	5	5 lane urban	11,000
I-40 Business Extension				
I-40 - Sandy Ridge Road Ext.	1.29	4	4 lane freeway	50,600
Sandy Rid. Ext Airport Connect.	1.58	4	4 lane freeway	37,100
I-73 Connector	1.66	6	6 lane freeway	65,200





40



Alternative E

This alternative investigated extending the Airport Connector on the Winston-Salem Thoroughfare Plan and connecting to Brian Boulevard near the proposed Old Oak Ridge Road / Bryan Boulevard interchange. The proposed I-40 Business Extension would connect to the I-40 / I-40 Business split and connect to the Airport Connector and the NC 68 /220 Connector. Sandy Ridge Road (SR 1850) would be extended to the I-40 Business Extension, with a trumpet interchange at Sandy Ridge Road (SR 1850).

Advantages

- Would relieve I-40 and NC 68 congestion.
- The trumpet interchange with Sandy Ridge Road (SR 1850) eliminates exposures to railroad traffic.
- Gives direct movement from the I-40 / I-40 Business split to the NC 68 US 220 Connector.

Disadvantages

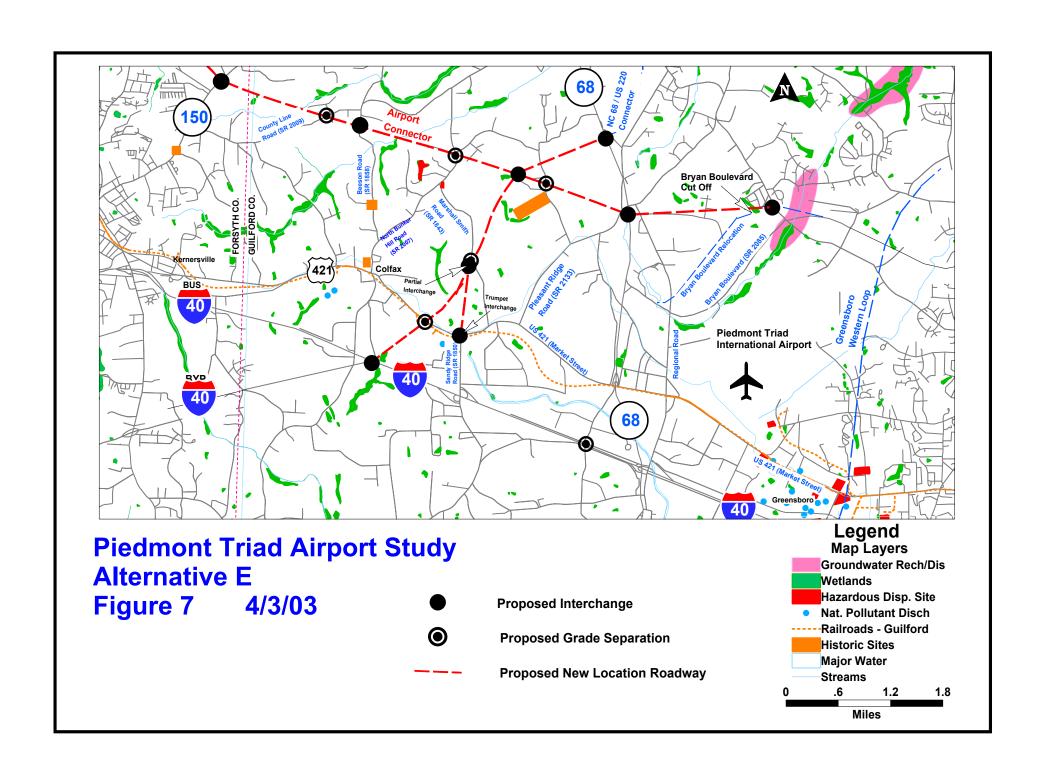
- Would require "cutting off" the relocated Brian Boulevard.
- Most new location length of all alternatives (see Chapter 6).
- Most new interchanges of all alternatives (see Chapter 6)
- Concerns that the future I-73 corridor may be routed down I-40 Business if constructed.
- Effects two sides of the historical property on Cude Road (SR 2016)
- Most expensive alternative

This alternative was presented to the Airport Committee on October 26, 2000, and a concern was that it was felt that the section of the I-40 Business Extension between the Airport Connector and NC 68 was too long range. Also there were some concerns that I-73 may be routed on the I-40 Business corridor if this was constructed. See Figure 8 for a map of Alternative E.

This alternative was carried forward for more study, and labeled Alternative 1 (see Chapter 5).



Table 5 - Alternative E Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	3	3 lane urban	10,500
Market Street Rel Airport Conn.	0.80	4	4 lane exprswy	20,200
Airport Connector				
NC 150 - Beeson Road	1.67	4	4 lane freeway	20,100
Beeson Road - I-40 Bus.Extension	1.92	4	4 lane freeway	20,100
I-40 Bus. Ext NC 68	1.37	6	6 lane freeway	55,700
I-40 Business Extension				
I-40 - Sandy Ridge Road Ext.	1.08	4	4 lane freeway	48,700
Sandy Rd. Ext Airport Conn.	1.44	4	4 lane freeway	51,500
Airport Conn US 220/NC 68 Con.	1.37	4	4 lane freeway	14,300
I-73 Connector	1.66	6	6 lane freeway	69,200







Alternative F

This alternative is a variation of Alternative E that utilizes the relocated Brian Boulevard.

Advantages

- Would relieve I-40 and NC 68 congestion.
- The trumpet interchange with Sandy Ridge Road (SR 1850) eliminates exposures to railroad traffic.
- Creates a direct movement between the NC 68 US 220 Connector and the I-40 / I-40 Business split.

Disadvantages

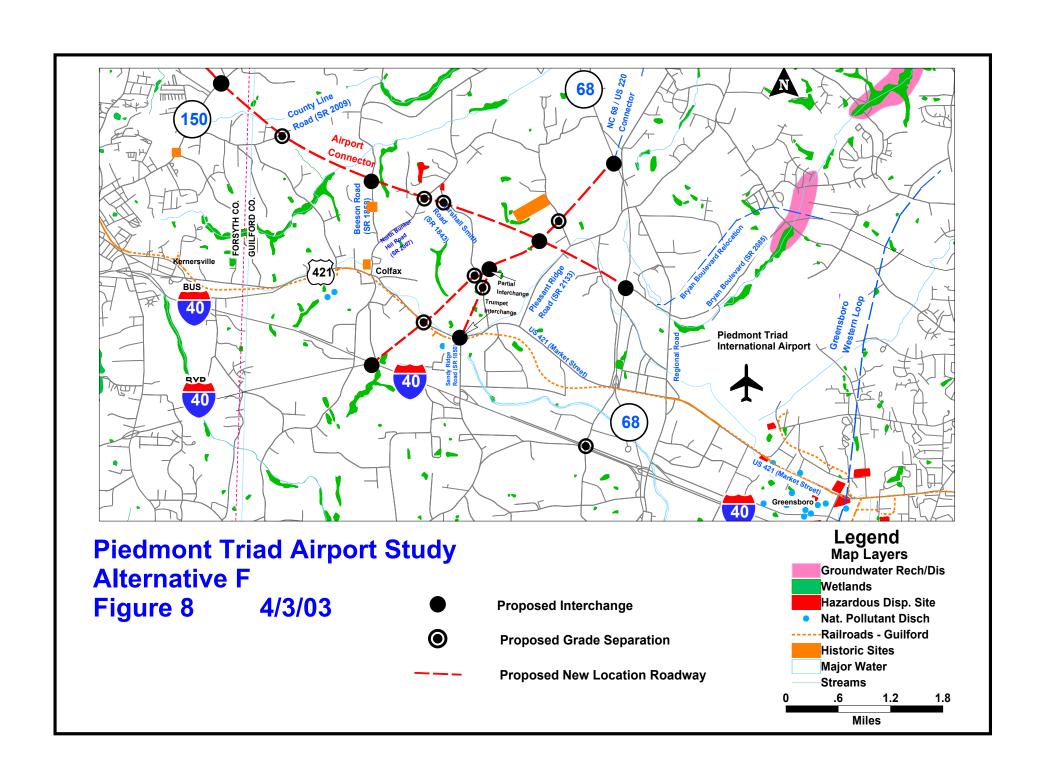
- Concerns that the future I-73 corridor may be routed down I-40 Business if constructed.
- Two of the interchanges on I-40 Business Extension are too close together (0.69 mile apart). Adjustments to allow for sufficient spacing are difficult because of historical sites.
- Requires the most grade separations of any alternative (see Chapter 6).
- Has substantially more historical effects with the exception of Alternative K.

This alternative was presented to the Airport Committee on October 26, 2000. This alternative was not chosen because it was felt that the section of the I-40 Business Extension between the Airport Connector and NC 68 was too long range. Also there were some concerns that I-73 may be routed on the I-40 Business corridor if this was constructed. See Figure 9 for a map of Alternative F.

Because this alternative is near two different historical sites, and two of the interchanges are too close together, this alternative was dropped.



Table 6 - Alternative F Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	3	3 lane urban	10,500
Market Street - Airport Conn.	0.90	4	4 lane exprswy	20,200
Airport Connector				
NC 150 - Beeson Road	2.09	4	4 lane freeway	18,800
Beeson Road - I-40 Bus.Extension	2.05	4	4 lane freeway	18,800
I-40 Bus. Ext NC 68	1.16	6	6 lane freeway	44,700
I-40 Business Extension				
I-40 - Sandy Ridge Road Ext.	1.75	4	4 lane freeway	48,900
Sandy Rd. Ext Airport Conn.	0.69	4	4 lane freeway	46,700
Airport Conn US 220/NC 68 Con.	1.26	4	4 lane freeway	17,300
I-73 Connector	1.66	6	6 lane freeway	69,200







Alternative G

This alternative takes the Airport Connector and brings it into Sandy Ridge Road and was one of the original ideas of the committee.

Advantages

- Would relieve I-40 and NC 68 congestion.
- The trumpet interchange with Sandy Ridge Road (SR 1850) eliminates exposures to railroad traffic.

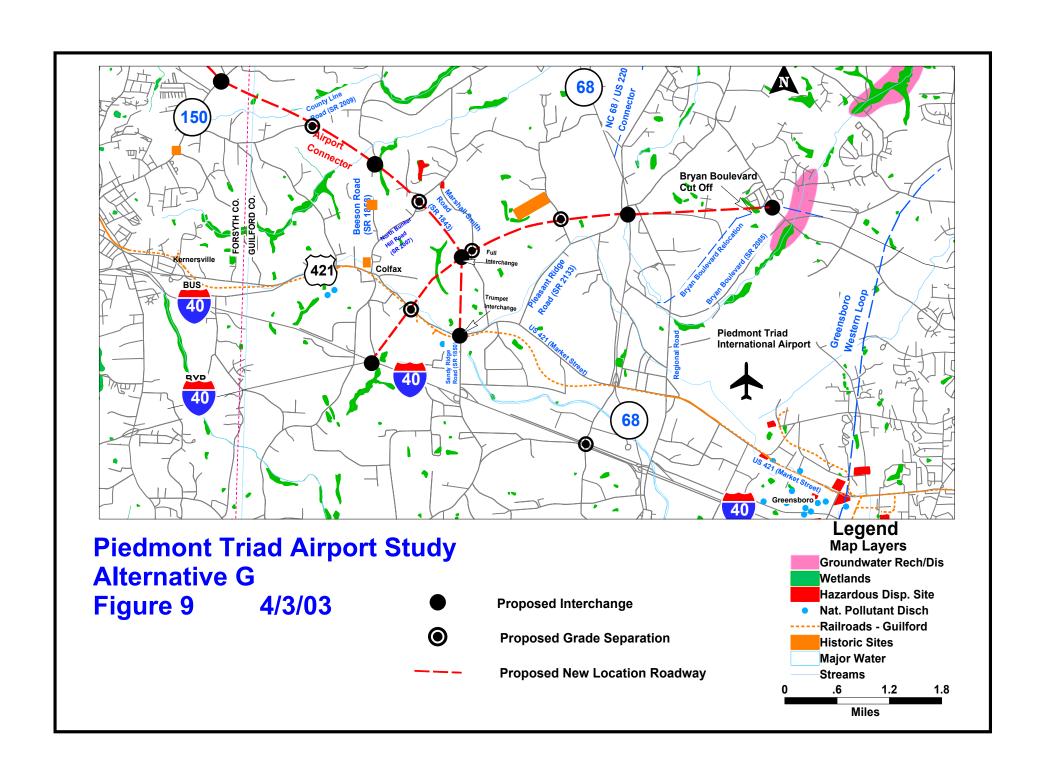
Disadvantages

- Concerns that the future I-73 corridor may be routed down I-40 Business if constructed.
- Tied for second highest wetland impacts.
- Impacts two different historic sites.
- Two interchanges barely less than one mile apart (0.93 mi.)

Since this alternative gives the most direct move from the I-40 / Business I-40 Split to the Greensboro Loop, this alternative was carried forward for further study, and called Alternative 2. After some modifications, specifically with interchange spacing, this Alternative 2 was the recommended alternative by the committee (see Chapter 5).

Table 7 - Alternative G Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	3	3 lane urban	12,100
Market Street - I-40 Bus. Ext.	0.93	4	4 lane freeway	28,800
Airport Connector				
NC 150 - Beeson Road	2.01	4	4 lane freeway	22,200
Beeson Road - I-40 Bus.Extension	1.45	4	4 lane freeway	22,200
I-40 Business Extension				
I-40 - Sandy Ridge Road Ext.	1.59	4	4 lane freeway	49,300
Sandy Rd. Ext NC 68	1.99	4	6 lane freeway	60,700
I-73 Connector	1.66	6	6 lane freeway	67,600









Alternative H

This alternative is a variation of Alternative G that connects to the existing Bryan Boulevard, but does not provide a through movement in the area.

Advantages

- Would relieve I-40 and NC 68 congestion.
- The trumpet interchange with Sandy Ridge Road (SR 1850) eliminates exposures to railroad traffic.
- Second shortest new location alternative.

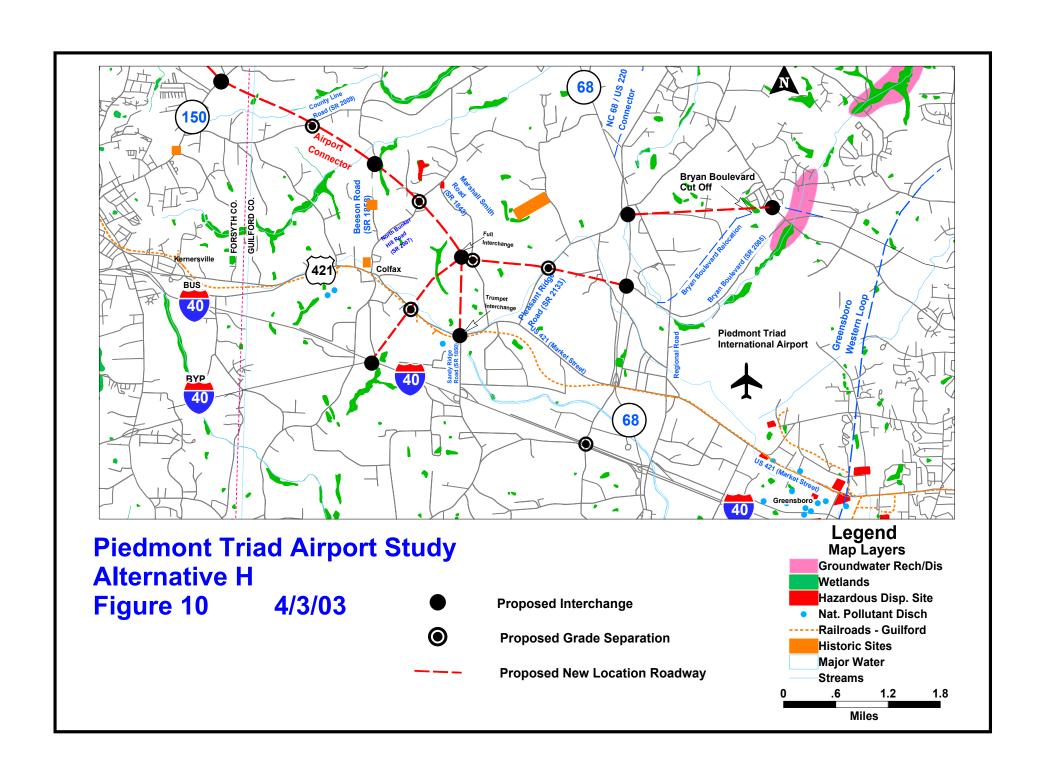
Disadvantages

- Through movement from I-40 / Business 40 split to northern Greensboro is "dog-legged".
- Requires widening of NC 68.

Due to the awkward dogleg movement created with this alternative, this alternative was dropped. See Figure 10 for the location of Alternative H.

Table 8 - Alternativ	e H Roadw	ay Reco	mmendations	
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	3	3 lane urban	10,800
Market Street - I-40 Bus. Ext.	0.93	4	4 lane freeway	22,300
Airport Connector				
NC 150 - Beeson Road	2.01	4	4 lane freeway	19,700
Beeson Road - I-40 Bus.Extension	1.45	4	4 lane freeway	19,700
I-40 Business Extension				
I-40 - Sandy Ridge Road Ext.	1.61	4	4 lane freeway	44,300
Sandy Rd. Ext NC 68	1.96	4	6 lane freeway	45,600
NC 68				
Bryan Blvd I-73 Connector	0.82	6	6 lane freeway	79,500
I-73 Connector	1.66	6	6 lane freeway	58,800









Alternative I

This alternative was introduced at an Airport committee on May 16, 2002 to eliminate the two separate interchange ideas on 68 (Alternatives E and F). This alternative pulls northward and creates one five legged interchange at NC 68.

Advantages

- Would relieve I-40 and NC 68 congestion.
- The trumpet interchange with Sandy Ridge Road (SR 1850) eliminates exposures to railroad traffic.

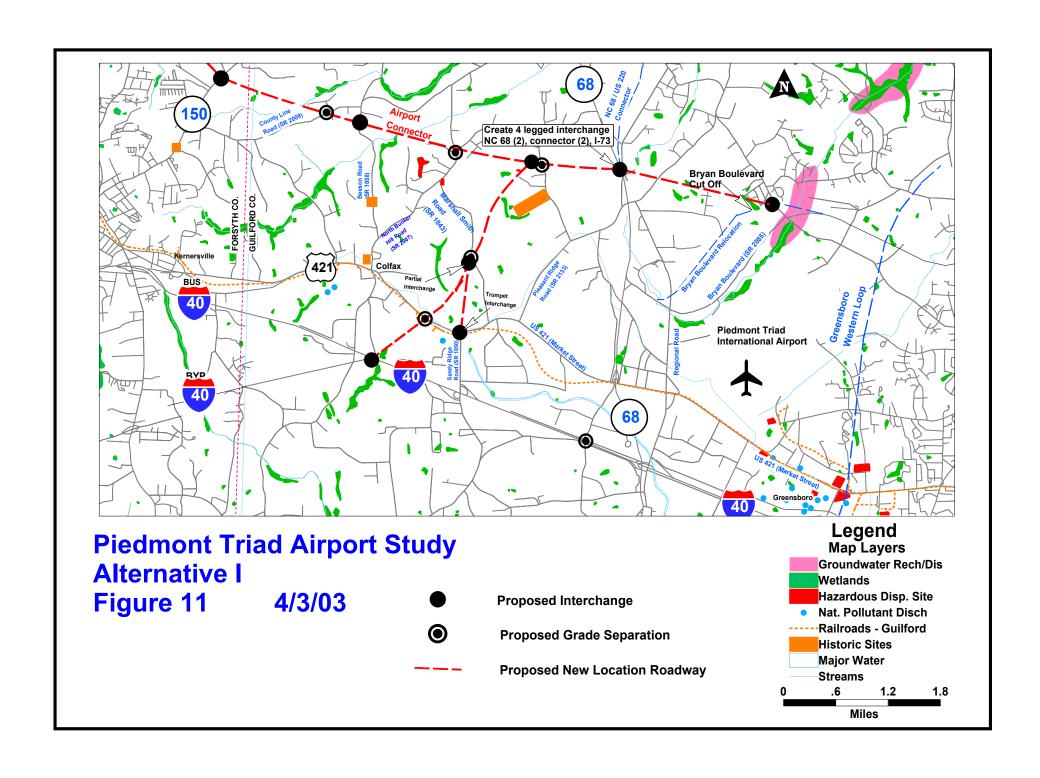
Disadvantages

- Creates a costly 5 legged interchange with two movements of the airport connector, NC 68/US 220 Connector, and two movements of NC 68.
- More northern than any of the other alternatives.
- Second highest on new alternative length of any of the other alternatives (see Chapter 6).

See Figure 13 for Alternative I. This alternative was carried forward for further study and called Alternative 3 (see Chapter 5).

Table 9 - Alternative I Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	3	3 lane urban	10,000
Market Street - I-40 Bus. Ext.	0.93	4	4 lane exprsway	15,500
Airport Connector				
NC 150 - Beeson Road	1.67	4	4 lane freeway	18,700
Beeson Road - I-40 Bus.Extension	2.04	4	4 lane freeway	18,700
I-40 Bus Extension - NC 68	1.00	4	6 lane freeway	58,300
I-40 Business Extension				
I-40 - Sandy Ridge Road Ext.	1.62	4	4 lane freeway	47,100
Sandy Rd. Ext NC 68	1.4	4	4 lane freeway	43,100
I-73 Connector	1.66	6	6 lane freeway	64,700









Alternative J

This alternative is a variation of Alternative G that does not have the trumpet interchange with Sandy Ridge Road (SR 1850) and US 421 (Market Street).

Advantages

Would relieve I-40 and NC 68 congestion.

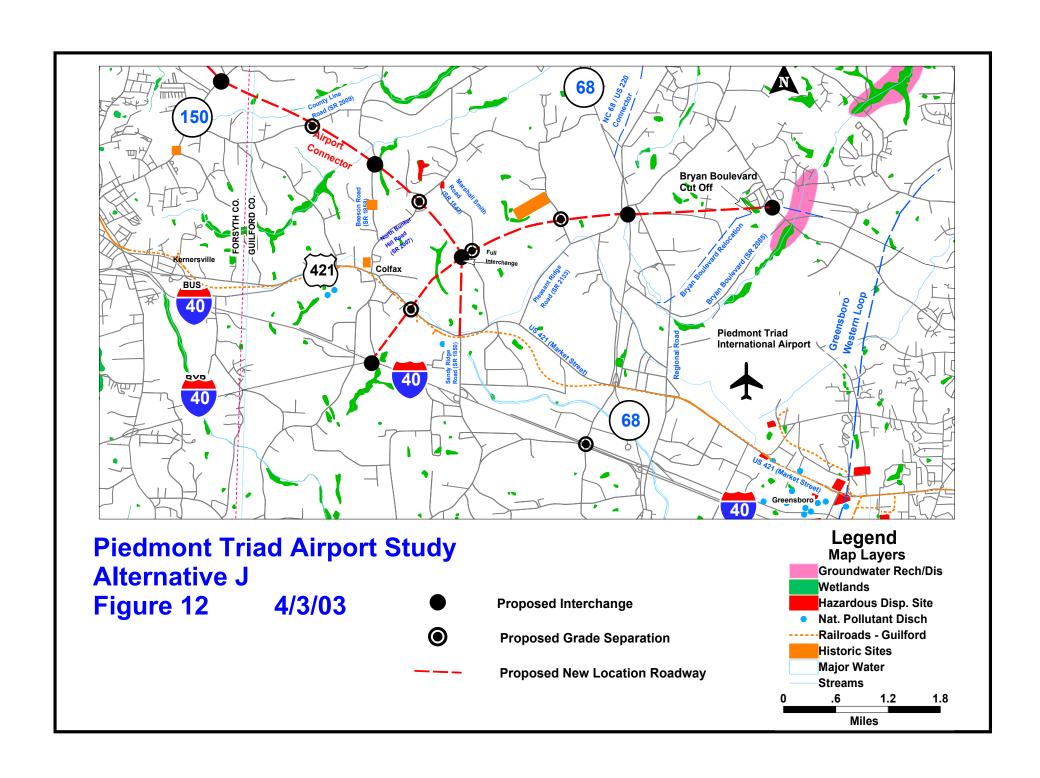
Disadvantages

• Sandy Ridge Road (SR 1850) continues to have exposures to railroad traffic.

Due to the elimination of the interchange with Sandy Ridge Road (SR 1850) and US 421 (Market Street), Alternative G would be more practicable. This alternative was dropped.

Table 10 - Alternative J Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	3	3 lane urban	11,800
Market Street - I-40 Bus. Ext.	0.93	4	4 lane freeway	24,400
Airport Connector				
NC 150 - Beeson Road	2.01	4	4 lane freeway	20,600
Beeson Road - I-40 Bus.Extension	1.45	4	4 lane freeway	20,600
I-40 Business Extension				
I-40 - Sandy Ridge Road Ext.	1.59	4	6 lane freeway	49,100
Sandy Rd. Ext NC 68	1.99	4	6 lane freeway	50,000
I-73 Connector	1.66	6	6 lane freeway	67,600

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Alternative K

This alternative was submitted by the Greensboro Department of Transportation on June 6, 2002. The alignment submitted was modified to avoid a direct impact to the historic property on Cude Road (SR 2016).

Advantages

- Would relieve I-40 and NC 68 congestion.
- The trumpet interchange with Sandy Ridge Road (SR 1850) eliminates exposures to railroad traffic.

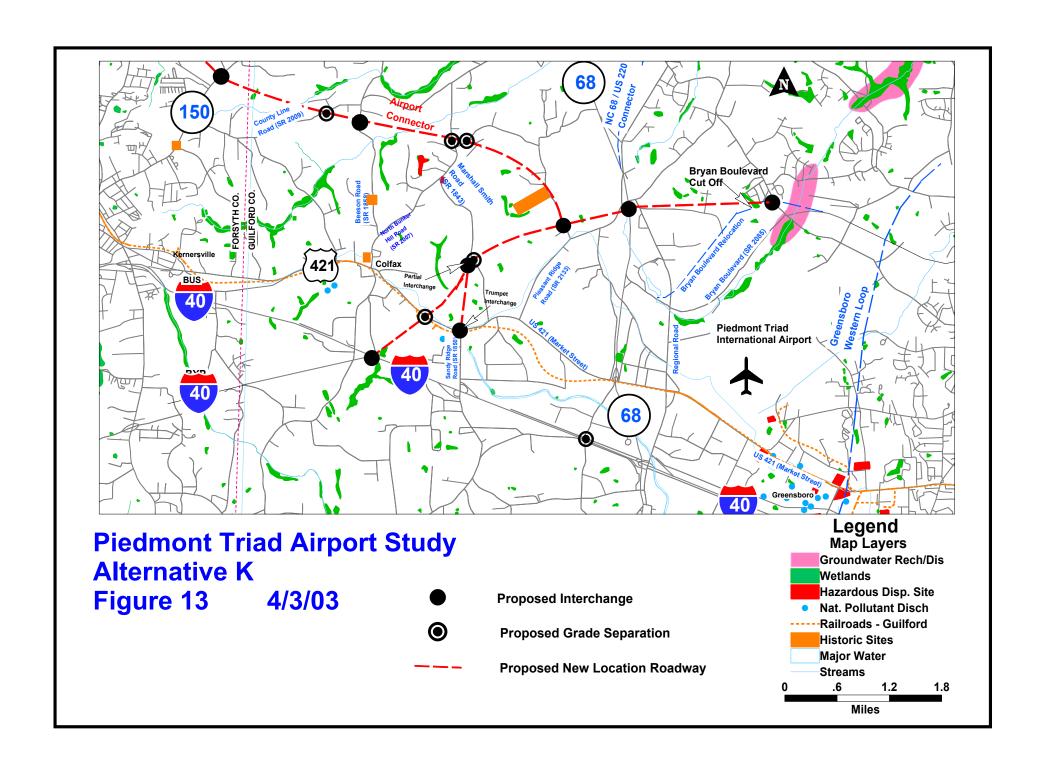
Disadvantages

- This alternative has the most direct impact to the historic property on Cude Road (SR 2016).
- To avoid the historic property and create an interchange with I-40 Business Extension, a situation was created where two interchanges are less than one mile apart (0.79 mile).

This alternative, as shown will likely not be environmentally permitted or constructed and was dropped. See Figure 13 for Alternative K.

Table 11 - Alternative K Roadway Recommendations				
Section	Length (mi.)	# Lanes	cross section	2025 ADT
Sandy Ridge Road (SR 1850)				
I-40 - Market Street	0.71	3	3 lane urban	9,600
Market Street - I-40 Bus. Ext.	0.77	4	4 lane exprsway	18,300
Airport Connector				
NC 150 - Beeson Road	1.70	4	4 lane freeway	18,500
Beeson Road - I-40 Bus.Extension	2.83	4	4 lane freeway	18,500
I-40 Business Extension				
I-40 - Sandy Ridge Road Ext.	1.55	4	6 lane freeway	56,500
Sandy Rd. Ext Airport Conn.	1.19	4	6 lane freeway	50,000
Airport Conn NC 68	0.79	4	6 lane freeway	67,100
I-73 Connector	1.66	6	6 lane freeway	70,300

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Alternative L

The Greensboro Department of Transportation submitted this alternative at the Piedmont Triad Area Airport Study meeting on July 24, 2002. The alignment is just a variation of Alternative G, changing the tie-in with NC 68 to the Bryan Boulevard / NC 68 intersection.

Advantages

- Would relieve I-40 and NC 68 congestion.
- Maximizes existing roadway capacity.
- Would likely be the easiest to be permitted through the resource agencies.

Disadvantages

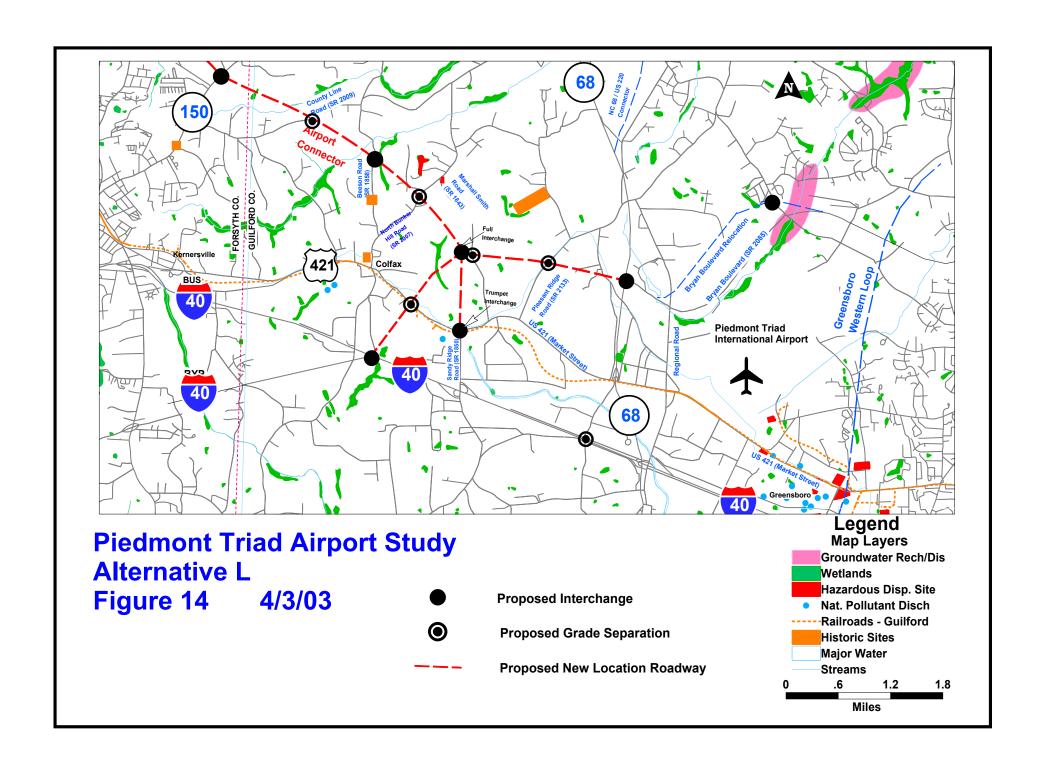
- Would require a flatter curve on the existing Bryan Boulevard location and would require widening the existing Bryan Boulevard.
- Requires I-73 traffic a non-direct route to go to the Greensboro Outer Loop

See Figure 15 for Alternative L. This alternative was carried forward for future study, and was called Alternative 4. See Figure 14 for Alternative L.

Table 12 - Alternative L Roadway Recommendations							
Section	Length (mi.)	# Lanes	cross section	2025 ADT			
Sandy Ridge Road (SR 1850)							
I-40 - Market Street	0.71	3	3 lane urban	15,100			
Market Street - I-40 Bus. Ext.	0.93	4	4 lane freeway	22,900			
Airport Connector							
NC 150 - Beeson Road	2.01	4	4 lane freeway	21,000			
Beeson Road - I-40 Bus.Extension	1.45	4	4 lane freeway	21,000			
1-40 Bus. Extension - Bryan Blvd	1.91	4	4 lane freeway	46,300			
I-40 Business Extension							
I-40 - Sandy Ridge Road Ext.	1.59	4	4 lane freeway	49,300			



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Back of Figure 14



Chapter 5- FINAL ALTERNATIVES

Alternatives For Public Review

After the 12 Alternatives detailed in Chapter 4 were narrowed down to four, further study and "tweaking" began of the alignments. The meeting to discuss all of these alternatives discussed in Chapter 4 was held on October 2, 2002. The committee decided to present to the public four



alternatives: E, G, I, and L (discussed below) and the no-build scenario. The others alternatives were dropped, and were not studied further.

For the purposes of further study, the 4 alternatives mentioned above were renamed:

- Alternative E was renamed Alternative 1
- Alternative G was renamed Alternative 2
- Alternative I was renamed Alternative 3
- Alternative L was renamed Alternative 4

Specific changes that were made in the alignments were to minimize socioeconomic and environmental impacts, and to provide for at least one mile spacing between interchanges. For the purposes of minimization, aerial photography (from May, 2002) was used, and is shown in the subsequent figures. Traffic modeling was not rerun and assumed to be the same since any corridor adjustments were minor.

All alternatives would improve public transportation opportunities in the immediate area.

The public meeting was held on November 14, 2002, and a summary of the findings can be found in Chapter 7.

The chosen alternative is Alternative 2, which is found in Figure 16. The other alternatives are shown in Figures 15, 17, and 18. A complete comparison of the Alternatives can be found in Chapter 6.

Discussion of Final Alternatives

Alternative 1 (see Figure 15) had the most new location freeway sections of any of the alternatives. Some felt that the new location section between the Airport Connector and the NC 68 / US 220 Connector was too long range. Also, the major traffic movement between the I-40 / I-40 Business split to NC 68 was not given priority. Due



to the expense and lack of support, this alternative was dropped at a January 10, 2003 committee meeting. The preliminary cost estimate for this alternative is \$228,000,000.

Alternative 3 (see Figure 17) was the northern most of all the alternatives. This alternative gives priority to the Forsyth to northern Greensboro Loop movement at the sacrifice of the I-40 / I-40 Business split to NC 68 movement. This alternative would make travel more difficult for High Point residents using Sandy Ridge Road to travel to the airport. After careful discussion, this alternative was dropped. The preliminary cost estimate for this alternative is \$207,000,000.

Alternative 4 (see Figure 18) brings the airport connector into Bryan Boulevard at the existing location. Although preferred by many, this alternative would create an akward movement for I-73 traffic as the I-73 connector (between NC 68 and Bryan Boulevard) would not be constructed. This alternative would also require major upgrades to existing NC 68 and the Bryan Boulevard relocation project. After careful discussion, this alternative was dropped. The preliminary cost estimate for this alternative is \$198,000,000.

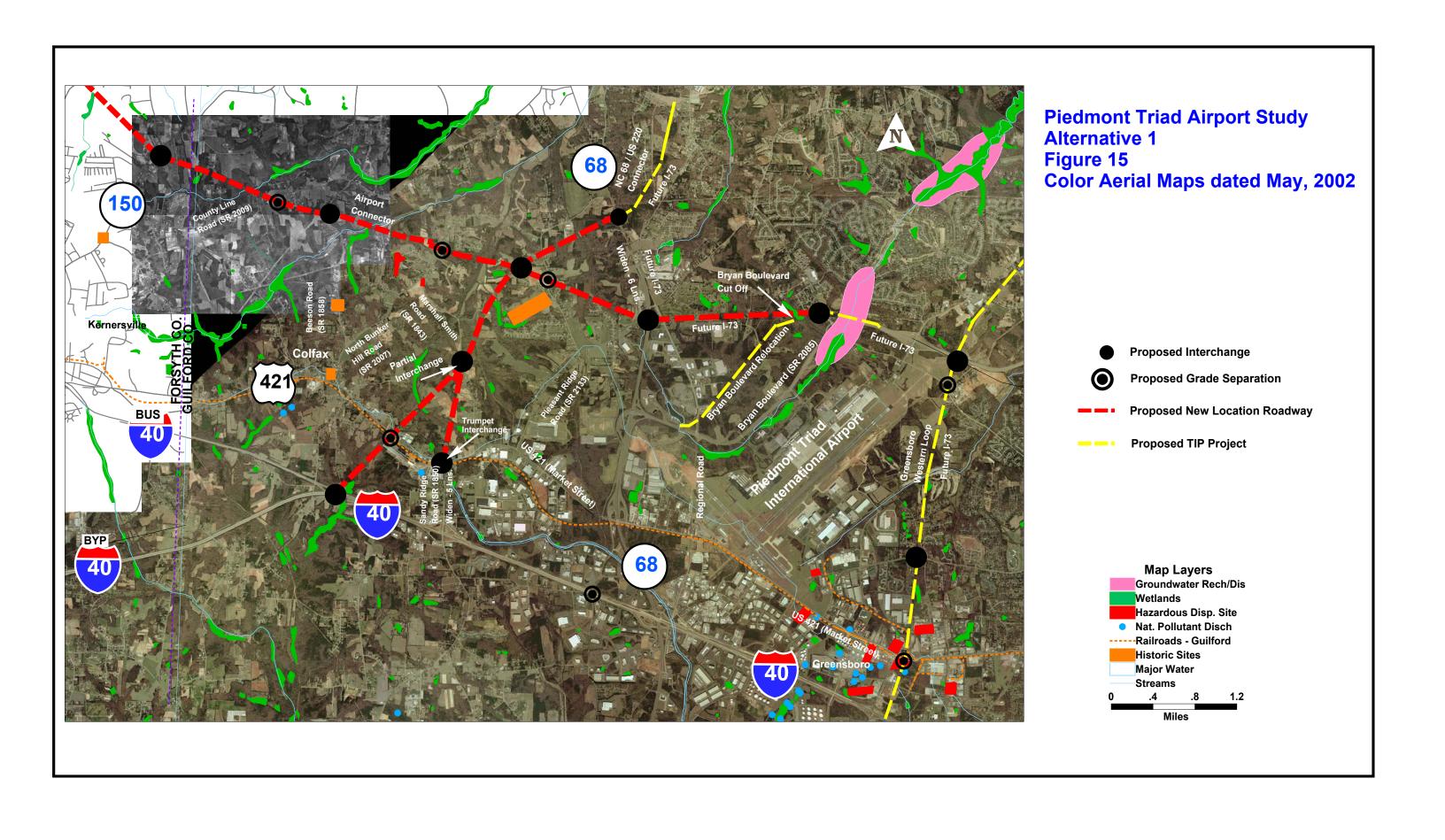
After careful review of the objectives of the study, considering public feedback, and gauging local desire, Alternative 2 (see Figure 16) was chosen as the recommended alternative.

Alternative 2 met the purposes of the study and accomplished those objectives in the most effective manner for the surrounding region. Also, the major traffic movement between the I-40 / I-40 Business split to NC 68 was given priority. The cost of the project (\$190,000,000) was also the lowest of the alternatives.

Alternative 2 will be presented to the Greensboro MPO Transportation Coordinating Committee (TCC) and Transportation Advisory Committee (TAC) on April 23, 2003 for hopeful inclusion on the Greensboro non-fiscally constrained Transportation Plan (formerly called Thoroughfare Plan).

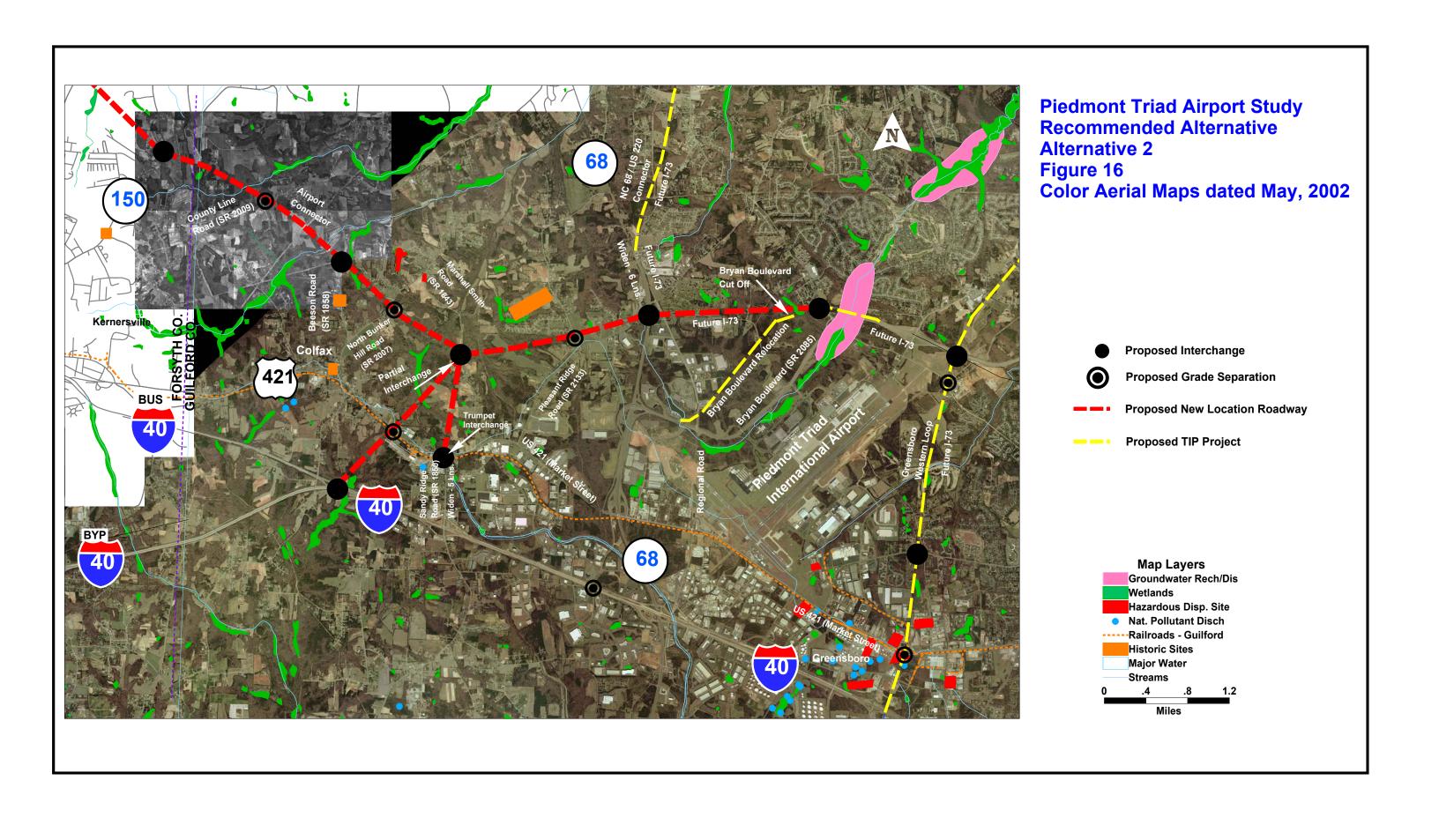
Piedmont Triad Airport Area Transportation Study April 15, 2003

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Back of Figure 15

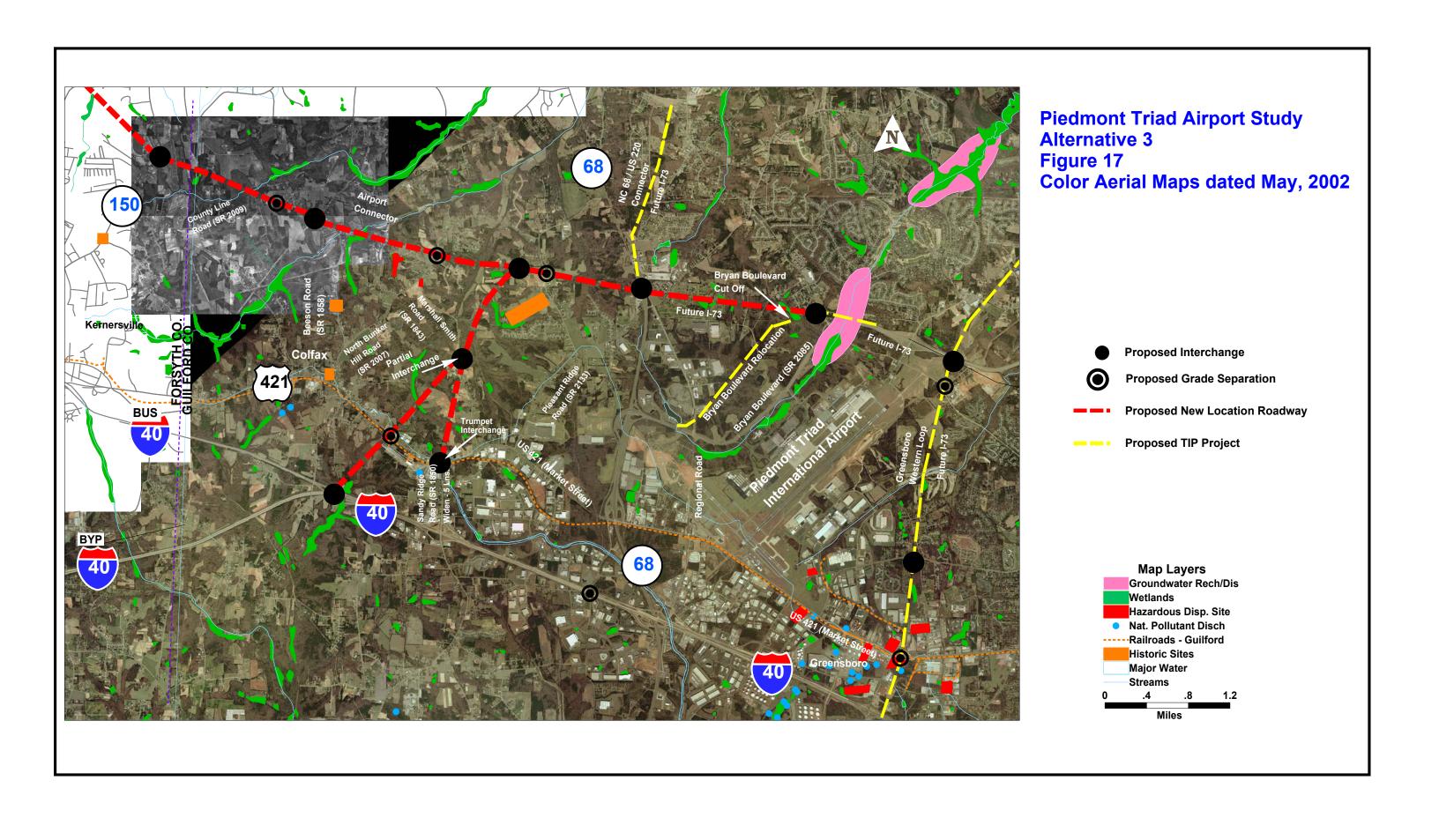




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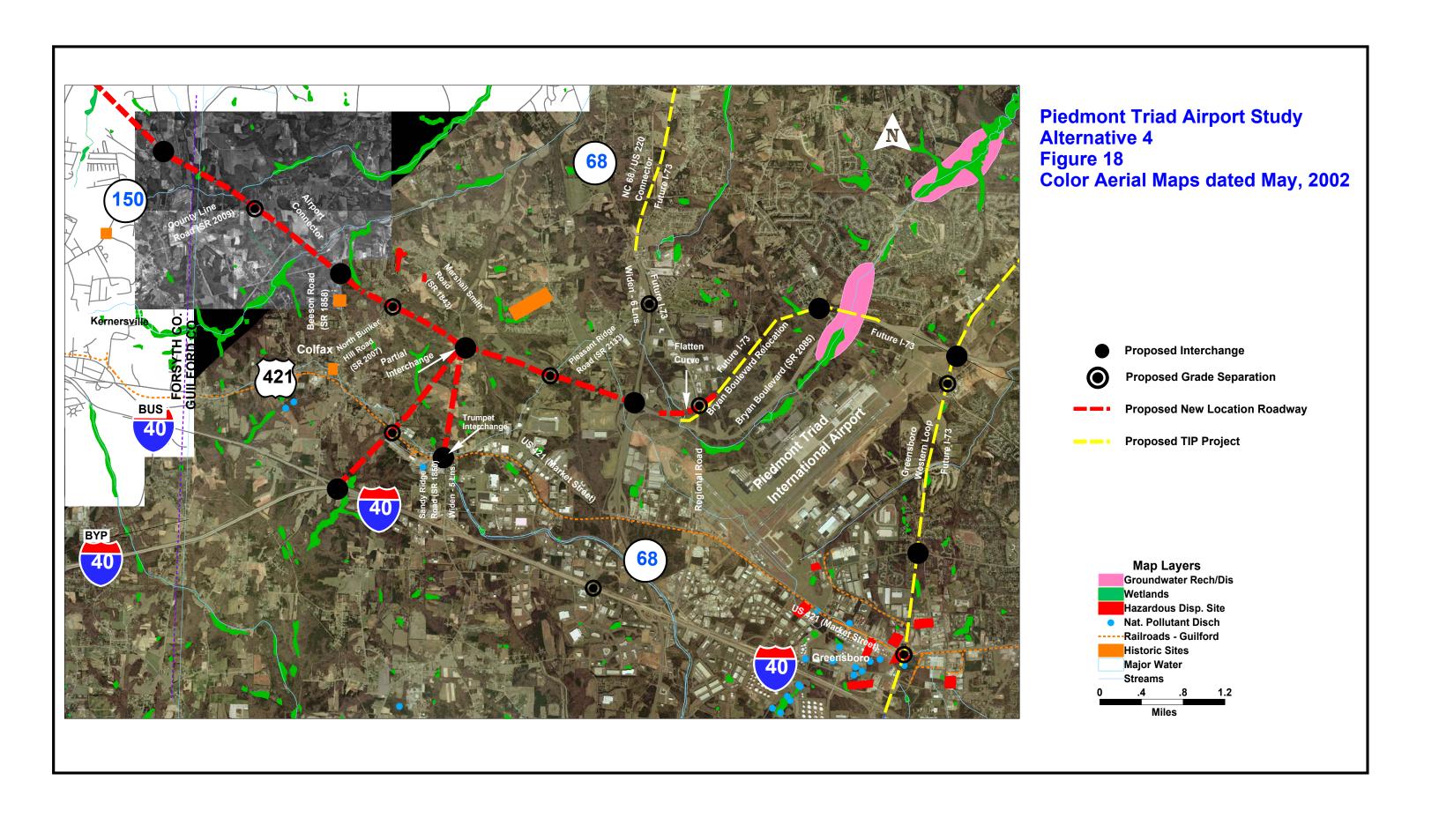
Piedmont Triad Airport Area Transportation Study April 15, 2003

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Back of Figure 17





Back of Figure 18



Chapter 6- ENVIRONMENTAL AND SOCIAL FACTORS

Consideration of Environmental/Social Factors

In the past several years, environmental considerations associated with highway construction have come to the forefront of the planning process. The legislation that dictates the necessary procedures regarding environmental impacts is the National Environmental Policy Act. Section 102 of this act



requires the execution of an environmental impact statement, or EIS, for road projects that have a significant impact on the environment. Included in an EIS would be the project's impact on wetlands, water quality, historic properties, wildlife, and public lands. While this report does not cover the environmental concerns in as much detail as an EIS would, preliminary research was done on several of these factors and is included below.

Wetlands

In general terms, wetlands are lands where saturation with water is the dominant factor in determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. The single feature that most wetlands share is soil or substrata that is at least periodically saturated with or covered by water. Water creates severe physiological problems for all plants and animals except those that are adapted for life in it or in saturated soil.

Wetlands are crucial ecosystems in our environment. They help regulate and maintain the hydrology of our rivers, lakes, and streams by slowly storing and releasing floodwaters. They help maintain the quality of our water by storing nutrients, reducing sediment loads, and reducing erosion. They are also critical to fish and wildlife populations. Wetlands provide an important habitat for about one third of the plant and animal species that are federally listed as threatened or endangered.

In this study, the impacts to wetlands were determined using the National Wetlands Inventory Mapping, available from the U. S. Fish and Wildlife Service.

Wetland impacts have been avoided or minimized to the greatest extent possible while preserving the integrity of the transportation plan.

Wetlands are shown on Figures 15-18 to show the relation with proposed roadways in the final alternatives 1-4.



Threatened and Endangered Species

A preliminary review of the Federally Listed Threatened and Endangered Species within the Piedmont Triad Airport area was done to determine the effects that new corridors could have on the wildlife. These species were identified using mapping from the North Carolina Department of Environment, Health, and Natural Resources.

The Threatened and Endangered Species Act of 1973 allows the U. S. Fish and Wildlife Service to impose measures on the Department of Transportation to mitigate the environmental impacts of a road project on endangered plants and animals and critical wildlife habitats. By locating rare species in the planning stage of road construction, we are able to avoid or minimize these impacts.

No threatened and endangered species are anticipated to be adversely impacted by any of the thoroughfare plan recommendations.

A detailed field investigation is recommended prior to construction of any highway project in this area.

Historic Sites

The location of historic sites in Piedmont Triad Airport Area was investigated to determine the possible impacts of the various projects studied. The federal government has issued guidelines requiring all State Transportation Departments to make special efforts to preserve historic sites. In addition, the State of North Carolina has issued its own guidelines for the preservation of historic sites. These two pieces of legislation are described below:

- National Historic Preservation Act Section 106 of this act requires the Department of Transportation to identify historic properties listed in the National Register of Historic Places and properties eligible to be listed. The DOT must consider the impacts of its road projects on these properties and consult with the Federal Advisory Council on Historic Preservation.
 - NC General Statute 121-12(a) This statute requires the DOT to identify
 historic properties listed on the National Register, but not necessarily those
 eligible to be listed. DOT must consider impacts and consult with the North
 Carolina Historical Commission, but it is not bound by their recommendations.

Care should be taken to make certain that all historic sites and natural settings are preserved. Therefore, a closer study should be done in regard to the local historic sites prior to the construction of any proposal.

Figures 15-18 show the Airport Area Environmental Data for the area surrounding the proposed projects. It appears there are no direct impacts to historical sites with any of the airport study projects. However, the proximity of all the alternatives to historical sites is of concern.



Noise Analysis Results

Most of the noise sensitive sites located within the airport area caused by any of the proposed alternatives are mostly single family homes, which are identified by the FHWA Noise Abatement Criteria as 67 dBA. For the purposes of this systems level study, it was assumed that a contour of 350 feet from the centerline of the proposed corridors would experience a noise level of 66 dBA or higher. Therefore, all activity land uses within the 66 dBA noise contour are considered for this study to be noise sensitive sites.

No detailed noise analysis has been made. The assumptions outlined above are to get estimates of substantial increases of noise.



ENVIRONMENTAL TABLE FOR INITIAL ALTERNATIVES												
	OCCURANCES PER ALTERNATIVE											
	ALT. A	ALT. B	ALT. C	ALT. D	ALT. E	ALT. F	ALT. G	ALT. H	ALT. I	ALT. J	ALT. K	ALT. L
PROJECT FACTORS												
Mainline New Location Length - miles ¹	7.56	8.37	9.53	9.89	11.31	9.90	9.63	7.96	10.35	9.63	10.49	7.94
Number of new interchanges	3	5	5	5	7	6	5	5	6	4	6	5
Number of rebuilt interchanges ²	1	2	1	2	2	2	2	3	2	2	2	1
Number of grade separations (roadway)	4	4	5	7	6	8	6	6	6	6	6	5
Railroad Crossings At-grade 3	1	0	0	0	0	0	0	0	0	1	0	0
Railroad Crossings Grade Separated ³	0	2	1	2	2	2	2	2	2	1	2	2
SOCIOECONOMIC FACTORS												
Schools Impacted	0	0	0	0	0	0	0	0	0	0	0	0
Parks Impacted	0	0	0	0	0	0	0	0	0	0	0	0
INFRASTRUCTURE												
Transmission Line Crossings	2	2	2	2	2	2	2	2	2	2	2	2
Gas Line Crossings	0	0	0	0	0	0	0	0	0	0	0	0
Water Line Crossings	0	0	0	0	0	0	0	0	0	0	0	0
CULTURAL RESOURCE FACTORS												
Roads Effecting Historic Properties	1	1	1	1	2	3	2	1	2	2	1	1
Direct Impacts to Historic Properties	0	0	0	0	0	0	0	0	0	0	0	0
NATURAL RESOURCE FACTORS												
Stream Crossings	3	5	6	6	5	6	5	6	5	5	5	5
High Quality Wetlands Impacted (acres)	0	0	0	0	0	0	0	0	0	0	0	0
Total Wetlands Impacted (acres)	2.9	2.9	2.9	8.2	5.9	5.6	7.2	7.2	3.8	7.2	3.8	
Surface Waters ⁵	0	0	0	0	0	0	0	0	0	0	0	0
PHYSICAL FACTORS												
Critical Watershed (acres)	0	0	0	0	0	0	0	0	0	0	0	0
Protected Watershed (acres)	274.9	304.3	346.5	359.6	411.2	360.0	350.1	289.4	376.3	350.1	381.4	288.7
Hazardous Materials Sites 6	0	0	0	0	0	0	0	0	0	0	0	0

Notes: Unless otherwise noted, estimates of impacts based on 300 foot corridor (estimated right of way limits)

Lengths are approximate. Mainline lengths include all new location corridors in the alternative
 Rebuilt interchanges are those that would need to be reconstructed to accommodate a new or additional traffic

³ Includes improvements Sandy Ridge Road (SR 1850), except. Alt. A

⁵ Includes ponds and lakes, includes entire pond acreage if pond is anticipated to be drained

⁶ Impacts include superfund points and sites, groundwater incidents, and hazardous waste facilities



ENVIRONMENTAL TABLE FOR PUBLIC HEARING ALTERNATIVES							
PROJECT FACTORS		ALTERNATIVE 2		ALTERNATIVE 4			
Mainline New Location Length - miles ¹	11.50	9.80	10.41	8.69			
Number of new interchanges	7	5	6	4			
Number of rebuilt interchanges ²	2	2	2	2			
Number of grade separations (roadway)	5	5	5	7			
Railroad Crossings At-grade ³	0	0	0	0			
Railroad Crossings Grade Separated ³	1	1	1	1			
Estimated Cost (Millions)	228.7	189.6	206.5	197.7			
SOCIOECONOMIC FACTORS							
Residential Relocations	25	31	28	35			
Business Relocations	4	5	4	4			
Schools Impacted	0	0	0	0			
Parks Impacted	0	0	0	0			
Churches Displaced	1	1	1	1			
Receptors Impacted By Noise ⁴	27	29	15	12			
INFRASTRUCTURE							
Transmission Line Crossings	2	2	2	2			
Gas Line Crossings	n/a	n/a	n/a	n/a			
Water Line Crossings	n/a	n/a	n/a	n/a			
CULTURAL RESOURCE FACTORS							
Roads Effecting Historic Properties	2	2	2	2			
Direct Impacts to Historic Properties	0	0	0	0			
NATURAL RESOURCE FACTORS							
Stream Crossings	6	5	4	6			
High Quality Wetlands Impacted (acres)	0	0	0	0			
Total Wetlands Impacted (acres)	2.7	4.7	7.9	4.0			
Surface Waters ⁵	0	0	0	14.6			
PHYSICAL FACTORS							
Critical Watershed (acres)	0.0	0.0	0.0	0.0			
Protected Watershed (acres)	418.1	356.3	378.5	316.0			
Hazardous Materials Sites ⁶	0	0	0	0			

Notes: Unless otherwise noted, estimates of impacts based on 300 foot corridor (estimated right of way limits). All impacts do not include existing TIP Projects (Greensboro Loop, Bryan Relocation, US 220-NC 68 Connector, etc.)

¹ Lengths are approximate. Mainline lengths include all new location corridors in the alternative.

² Rebuilt interchanges are those that would need to be reconstructed to accommodate a new or additional traffic

³ Includes improvements to Sandy Ridge Road (SR 1850)

⁴ Receptors are assumed to be 350 feet from roadway centerline.

⁵ Includes ponds and lakes, includes entire pond acreage if pond is anticipated to be drained

⁶ Impacts include superfund points and sites, groundwater incidents, and hazardous waste facilities

⁷ Cost Estimates not calculated for Alternative 5, assumed to be higher than Alternative 1

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Chapter 7 – PUBLIC INVOLVEMENT

This chapter outlines the public involvement conducted for the study and the results of that involvement. The summary of comments is presented first, and then copies of the handouts, and more specific comments given by the public. Approximately 175 people attended the November 14, 2002 drop in session.



Summary of Comments

Characteristics Related to Airport Area: For each characteristic the columns relate to the number of compiled choices (e.g. 8 respondents thought Improved Travel Time and Speed was the most important characteristic) (1 was most important, 6 was least important)

	1	2	3	4	5	6	NA
Improved Travel Time/Speed	8	20	28	18	12	34	53
Reduced Roadway Congestion	45	48	16	12	6	1	45
Economic Development	11	8	11	16	36	36	54
Improved Safety	37	24	26	18	11	6	51
I-73 Routing	4	7	19	28	35	26	53
Improved Highway Linkage	25	12	20	28	18	17	53

Individual Segment Ranking: For each segment the columns relate to the number of compiled rankings (e.g. 28 respondents feel the Forsyth Co. to the Airport segment was the most important segment) (1 was most important and 4 least important)

	1	2	3	4	NA
Forsyth Co. to Airport	28	18	18	68	45
I-40/Bus 40 to Airport	59	35	32	6	43
NC68 to US220	37	28	46	25	39
Sandy Ridge Rd. to Airport	20	50	35	27	43



1st Choice Ranking of Segments by Alternative: Compilation of respondents chosen alternative to segment (e.g. 4 respondents that feel Alt.1 should be the chosen alignment alternative also feel that the Forsyth Co. to Airport is the most important segment)

1 st Choice	Alt 1	Alt 2	Alt 3	Alt 4	No build
Forsyth Co. to Airport	4	0	33	9	1
I-40/Bus 40 to Airport	0	3	3	35	11
NC68 to US220	3	1	8	15	7
Sandy Ridge Rd. to Airport	2	2	3	9	3



Press Release

The following is the press release for the November 14, 2002 Public Meeting

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FOR IMMEDIATE RELEASE

CONTACT:

Scott Rhine, Regional Transportation Planner Piedmont Authority for Regional Transportation

DATE:

November 8, 2002

HEADLINE:

PART is holding public drop in session

BODY:

The Piedmont Authority for Regional Transportation (PART) in concert with the NCDOT, Greensboro, High Point and Winston-Salem / Forsyth County Metropolitan Planning Organizations (MPOs), and Guilford County Planning are holding a meeting November 14, 2002 to solicit public input on alternative alignments for new roads in the Airport Area as part of the Airport Area Access Study.

The public drop in session will be between the hours of 3-7 p.m. on November 14th at the Piedmont Triad Partnership Offices, 7614 Business Park Drive, Greensboro, NC 27409. For directions to the meeting location view the meeting notice on the PART web page at www.partnc.org



The following is the Public Drop In Session handout for the Triad Airport Study

Piedmont Triad Airport Area Transportation Study April 15, 2003

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Summary Sheet

The following is the Summary Sheet that was presented to the public at the drop in session. In brief, this explained the four alternatives.

PIEDMONT TRIAD AIRPORT AREA STUDY, NOVEMBER 14, 2002

Summary Sheet



Purpose of Public Drop In Session

Gather Public Input of the 4 Alternatives Presented.

Please ask questions of staff that are present, and leave us your completed comment sheet, or return your completed comment sheet to the PART offices.

What is done with the input

All input received through the public involvement process will be carefully reviewed and considered before any final recommendations on the Piedmont Triad Airport Area Study are made. ALL COMMENTS ARE DUE BY NOVEMBER 30, 2002.

What happens after today? The Next Step.

In the near future, the Piedmont Triad Airport Area Study Committee will adopt the proposed alignment plan or possibly restudy some projects of the proposed plan based on comments received.

The proposed projects will hopefully be incorporated into the local area non-fiscally constrained Transportation Plan (formally called a thoroughfare plan).

If the Transportation Plan is mutually adopted by the local area and the Department of Transportation,

- It is **NOT** a promise to build the shown facilities
- It is NOT necessarily the final call on the location of a new road.
 When funding is supplied to the project, more in depth study is
 made on the corridor, which could cause shifts in the alignment.
 However, we feel this is the best preliminary location for the
 corridor.

These alignments will:

- provide for the orderly development of an adequate street system as land development occurs or as traffic increases
- reduce travel and transportation costs
- reduce the cost of major street improvements, mainly through the coordination with private action
- enable private interests to plan their actions, improvements, and development with full knowledge of public intent
- minimize disruption of people and businesses
- reduce environmental impacts particularly air quality, wetlands, historic sites, parks, and other publicly uses recreational areas,



archeological sites, endangered species, and cohesive neighborhoods

PIEDMONT TRIAD AIRPORT AREA STUDY

PIEDMONT TRIAD PARTNERSHIP OFFICES

Piedmont Authority for Regional Transportation
North Carolina Department of Transportation
City of Greensboro
City of High Point
City of Winston-Salem
Guilford County Planning Department



Introduction

The economic and social well being of the Triad Area (which includes the Cities of Greensboro, High Point, and Winston Salem) depends upon the quality of the transportation facilities that exist in the area. If people are able to travel about freely in an area today and as the economy grows, then the transportation systems have been planned to properly accommodate existing and future travel. Well-planned transportation systems will allow for economic growth, while simultaneously providing safe and efficient travel throughout the Triad Area.

The North Carolina Department of Transportation, in coordination with the Piedmont Authority for Regional Transportation (PART), Greensboro Urban Area Metropolitan Planning Organization, High Point Urban Area Metropolitan Planning Organization, and the Winston-Salem/Forsyth County Urban Area Metropolitan Planning Organization and Guilford County Planning Department cooperatively developed the Piedmont Triad Airport Area Study.

Study Goals

- 1) future routing of I-73
- 2) relocation of Bryan Boulevard and immediate access to the airport terminal
- 3) improved access from High Point to the airport
- 4) improved access from Forsyth County to the airport
- 5) access to the airport using public transportation

This study sets forth a transportation system in the area, that will eventually become elements of the local area Thoroughfare Plans, and that will serve the anticipated traffic and land development needs for the area.

Alternatives

It should be emphasized that the recommended plan is based on anticipated growth of the urban area as indicated by current trends. Prior to construction of specific projects, a more detailed study will be required to reconsider development trends and to determine specific locations and design requirements.

Fifteen alternatives have been studied. They have been narrowed down to four alternatives for public review.



Alternative 1

This alternative investigated extending the Airport Connector on the Winston-Salem Thoroughfare Plan and connecting to Brian Boulevard near the proposed Old Oak Ridge Road / Bryan Boulevard interchange. The proposed I-40 Business Extension would connect to the I-40 / I-40 Business split and connect to the Airport Connector and the NC 68 /220 Connector. Sandy Ridge Road (SR 1850) would be extended to the I-40 Business Extension, with a trumpet interchange at Sandy Ridge Road (SR 1850).

Alternative 2

This alternative takes the Airport Connector and brings it into Sandy Ridge Road and was one of the original ideas of the committee.

Alternative 3

This alternative was introduced at the airport area study committee on May 16, 2002 to eliminate the two separate interchange ideas on NC 68 on two previous alternatives. This alternative pulls northward and creates one five legged interchange.

Alternative 4

The alignment is a variation of Alternative 2, changing the tie-in with NC 68 to the Bryan Boulevard / NC 68 intersection.



Public Comments for the Airport Area Transportation Study

The following is a word for word compilation of the comments on the Airport Area Transportation Study (AATS) that respondents included on the public comment sheet, based on the November 14, 2002 drop in session.

#4 has the least impact on our Quail Creek neighborhood. At least 4 of homes would be destroyed by the alternate plans. Plus, the rest of the homes would be majorly affected and depreciate in value and quality of life. Our neighborhood of 86 was established only 4 years ago. We moved here for less traffic and lower taxes. If this was in the works, why grant building permits and continue to let developers build in these areas?

NC routes show the removal of a historic house being torn down. This needs to be changes and considered. Location on Marshall Smith Road, it was built in 1923.

Widen Market Street from Sandy Ridge to Bus. 40. Widen Sandy Ridge to 3 lanes from Market St. to I40 Interchange. Pleasant Ridge Rd. should link up with Bryan Blvd. Widen it from Market Street to 68. The airport is not hard to get to. The trouble is the roads mentioned.

My development is fairly new, also one close to us (Woodfield). Why were we not told this plan was coming? Thank you.

If the state leaves the roadways the way they are the state and counties could save ALL that money proposed to spent from taxpayers to be better spent elsewhere where it is REALLY needed like schools. Invest in our future.

It is disturbing that none of this was mentioned when our neighborhood was built less than 4 years ago. This has a direct impact on the quality of life and home value if any is done, but worst is #2.

My concerns are with plans 1,2,3 that would destroy homes in existing neighborhoods. If this had ever been considered by a planning commission why were these communities ever allowed to be built. It seems that Plan 4 is more economically sound as well as least destructive while still accomplishing your goals.

I believe alternatives 2 and 4 are the best because they require the least # of miles of roadway to be built. Also alternative 4 impacts the least number of receptors with noise. Alternative 4 also has least impact on wetlands. Furthermore, 2 and 4 conserve more important watershed acres.

The newness of our development established just four years ago, if you knew this was coming why did you allow this development of homes. I will be retiring soon and can not afford the loss of my home that this is going to cause.



The Quail Creek Development was established 4 years ago and I don't want this entrance way or our neighborhood to be forced from their home or the entrance way to the development to be done away with. I certainly would NOT like to see any other roadway in front of my home. If you knew this was coming why did you let us build here?

As resident of Quail Creek Development, we find alternative 4 least disruptive to our quality of life and most appealing regarding planning.

Under no circumstances do we think alternative 2 is viable. Why not use/expand present corridors of 68 and 421. This would be more advisable.

How can DOT and Guilford County allow developments to start if this plan was initiated 2 years ago. Why aren't options considered that take these roads through undeveloped commercial land? I certainly hope that developers did not influence this decision.

Understand need for roads but am deeply disappointed government let us build over 200 new homes when they knew this was coming. Really feel betrayed and hope that powers that be don't put (big) business interest ahead of residents and quality of life. We have 90 homes here. Please pass us by!

We believe that protection of existing neighborhoods as well as wetlands is also critical!!

An airport connection seems to be a major waste of roadway money when I-40 and I-40 Bus are so close to the airport.

Alternative 4 would be the most cost effective for PART. Residential areas would be less impacted by noise, prospective businesses would be in favor of relocating families to area, less social/emotional liability than other alternatives.

At least 4 of our neighbors will be forced from their homes. Quail Creek Development is 4 years old - if you knew this was coming them why did you let us build here?

If changes must be made, Alternative 4 would be my choice.

Consider efficient routing; reduce number of intersections; provide for increased traffic loads by taking more off of I-40

Not in favor of the FedEx hub in Greensboro

Alternative 4 makes the most sense. It connects with Bryan Blvd and is the shortest route requiring the fewest interchanges.

Rerouting Bryan Blvd is a waste of taxpayers dollars. Alternative 4 has least impact on homeowners, so it should be considered above others.

Alternative 4 would effect the NW residential area less than the others.



As we develop it is important to keep in mind signage for the existing businesses

The airport connector road is unnecessary. There is and will be an abundance of roads in this area.

I-40 widening should be sufficient

I feel already have I-40 and widening of this would and should be sufficient

Alternative 2 is the worst alternative on the list.

Airport connector not deemed necessary

Where are lakes Higgins and Brandt in reference to the maps?

Every time you build another road, you cause more congestion.

I do not see where any of the 4 alternatives mentioned in Question 1 are needed. I-40 expansion is plenty.

Could the interchange on Marshall Smith be moved to farm land(east) and not on houses - one of which is the family 80+ yr old home place.

In the segment of Sandy Ridge Rd. and I-40 going north, please move right-of-way west by at least several hundred yards. This would minimize damage to existing houses on Marshall-Smith Rd. The area west has almost no houses and represents relatively small changes with road alignment these land values in the west side would probably be lower that the present alignments proposed. This would eliminate interference with the potential historic sight of the 80+ year old farm house underneath the current partial interchange.

I do not like the survey form. The questions ask me for information and my thoughts about issues I don't have knowledge. I only saw the maps for Guilford County and do not know how the highway affects or runs through other counties. I see no reason for the airport connector, since we have I-40.

2 and 4 appear to run through wetlands area at the north of the new Girl Scout Environmental Center which will be developed in 2003. The future address will be 8818 W. Market (Magnolia Manor) and 1011 Pleasant Ridge Rd. We think you could eliminate the extension of Sandy Ridge Rd to the airport connector. High Point traffic can easily access from 68 or 311N to I-40 to proposed I-40/Bus 40 to airport connector.

Alternative 4 disrupts the entire Airport Center Business Community. Major companies and employee of the triad are located here. It is one of the premier business communities in the areathe lake and wildlife create a beautiful setting-please don't destroy that.



Doubt any input will be taken into decisions. Up to now the only voices listened to are politicians and contractors. Residents are disregarded especially those who have lived in the airport area for over 30 years.

Number 4 would be the least detrimental to existing large neighborhood communities along Pleasant Ridge and Cude Road. It seems to be the least costly and least destructive to homes and wetlands. What would be left of these subdivisions after the decimation of homes entrance ways and other unforeseen obstacles? Very costly! Very destructive!

In consideration of the failure to initiate completion of any loop around central Forsyth County, it is doubtful that these airport connector would serve any purpose apart from creation of development property. It is doubtful that these connectors would serve general transportation needs outside the scope of PTI.

Alternatives 1&3 traverse the headwaters of Reedy Ford and would cause huge disruption of wetlands and gashing through the ridge between Marshall-Smith and Cude. Alternative 2 displaces property owners all along Pleasant Ridge and Cude. Alternative 4 is the only one that is feasible and cost effective.

I question the projections of increased future traffic of any significant amount from Forsyth/Surry Co. or Virginia necessitating the airport connection as conditions stand now. I would hope planning would depend on some appearance of increased commercial development before roadways are developed.

Alternative 4 is the least offensive of all choices because it effects the least amount of homeowners and their displacement. Concept unnecessary and costly for unfounded data to support the concept.

As a resident of the airport area, alternative 4 seems to be the best alternative that least disrupts residential area.

Alternatives 1,2,&3 have a needless connector to the north side of the airport and impact existing neighborhoods far too much.

Option 4 disrupts least. Protected watershed acres. Also smallest number of miles to build, less costly; airport to Winston connector not needed. Why not propose upgrade of existing I-40/Bus40 corridor will disrupt less neighborhoods.

We don't perceive any need for a Forsyth County airport connector. My wife and I both commute to Winston-Salem to work. A much better plan which limits highway sprawl would be to simply expand Business 40, especially given that these will be a Winston-Salem beltway for access.

If roads are ever built I would propose that Sandy Ridge Road and I-40 be shifted far enough west to iss houses on Marshall-Smith Rd.



If you have to build roads, I suggest alternative 1 and moving the Sandy Ridge and I-40 proposed connections west far enough to not take the houses on Marshall-Smith Rd.

We are opposed to any highway development in this area. We recently relocated to this area on the premise that the area would remain a quiet residential wooded area. According to the airport area plan issued in print on 4/3/02 the plan would not interfere with our property. I don't have any need for any of these routes. Alternative 4 is the furthest from my home. The other 3 alternatives are right next door. Expect some protests if you go with anything but alternative 4.

You need to create more detailed maps. Question 2 doesn't have enough info. PTI doesn't have a lot of problems. Please contact everyone to be affected. Can citizens participate in the environmental study?

Rather than paving the diminishing rural agricultural land left in the county, why not use the existing I-40/NC68 corridor? In the 4 proposals, Alternative 4 seems the least impact on the communities of Quail Creek, 4 Oaks and the future one located on Ballard Rd.

I don't agree that additional highway routes will improve access to anything but I think additional lanes to the routes we have now and improved off/on ramps would benefit everyone. For instance get rid of the 360degree loopdeloop on ramps.

I can understand the need for extending Sandy Ridge Rd. and I-40 business to take some congestion off the Hwy 68 interchange. But I feel strongly that there is no need for an airport connector between Guilford and Forsyth Counties. We already have tow interstates in place to handle this traffic. If future improvements need to be made, then widen these roads that are already in place. The widening of these roads would be less intrusive and come at a much lower cost than new construction. If the airport connector must be constructed, then Alternative 4 would be the best selection due to fewer miles of new mainline location, fewer interchanges and fewer acres of protected watershed.

Stop taking farmland and drainage areas for more roads. I don't live here because of access to the airport. I live here because of the trees and land. I drive by horse farms. I don't need more road rage drivers.

I do not feel the Forsyth Co to Airport connector is needed. We should concentrate on the I-40/Bus40 route to the airport for the following reasons: much cheaper, would not disrupt properties (maple leaf, four oaks, quail creek and Woodfield communities), current infrastructure would handle the necessary traffic.

What is the purpose of this road? One would think that building the FedEx hub in this area would be enough. It appears to be the beginning of the end for residences in western GSO. Is there anyone that actually does long-range planning for GSO/Guilford Co? If so, why do communities of \$250,000 houses have a 6 lane highway driven through it? How much is this being driven by FedEx's need to have a rapid corridor north?



I do not believer that the Forsyth County to airport connector is needed. We should expand our current roads to handle any traffic increase. This would be cheaper and would not disrupt properties. If you still believe this road is needed, I would choose Alternative 4. Alt.4 would disrupt far fewer properties and new developments than the other alternatives.

Goals of study are not valid. Considering the vast amounts of commercial space already built and available, why develop more. I see no economic need for the completion of any of the proposed roads. I-40 and Bus40 thoroughfares should be used, expanded, completed! There may be a need to provide a better connector of I-40 and airport, but utilize 68. It is an incredible proposal to provide better roads to PTI than are at ATL Hartsfield. PTI has only 29 flights a day or is this a huge freebe for FedEx at taxpayer expense? It seems that PART has forgotten that there are reasons for living in the area other than roads and airports.

When will final decision be rendered?

I own property at 3205 Edgefield Rd.. It is part of Woodfield residential development. I would like plan 2 or 4. They would cause less impact on residences. They should be less expensive for taxpayers.

As the developer of Four Oaks, I would like to minimize the impact of the Forsyth County connector on that subdivision as much as possible. As you are aware, the homeowners are very upset about some of these proposals. We still have several lots that could be adversely affected. Please keep me posted on any new developments.

Extending Bryan Blvd to I-73/Pleasnat Ridge Rd interchange and aligning airport connector to this interchange is critical. Extending Pegg Rd. over I-40 is important to keep local/commuter traffic off NC68. The Bus40 extension to the airport connector & I-73 is also critically important.

Limited access highway connection from Bryan Blvd to HWY311 in High Point must be addressed. It can follow the Sandy Ridge Rd/Johnson St. corridor which is relatively undeveloped at this point in time. This should keep R/W acquisition costs to a minimum. It can be implemented faster than a new Forsyth Co. connection, thereby providing faster interconnectivity and East-West redundancy as an alternative to I-40 when it becomes impossible (accidents/construction). An interconnected traffic signal system between High Point and Greensboro is needed to coordinate signal timing on HWY 68 and Wendover Ave.

An alternate route to the airport is imperative for the economic and social well being of the western Triad. I-40 will not (does not) handle the present and future traffic. We also need alternative due to traffic congestion due to accidents on I-40.

Option#1 the best, #3 next best. We want to save out new home and 11 acres. We've only been there 3 months.

We like Alternative 1 the best. Least impact on environment and housing.



Both Alternatives 1&3 go too far (not acceptable) north and disrupt established communities unnecessarily. Alternative 4 is least disruptive but does not give good connection of I-73. Alternative 2 seems to be the least disruptive while giving reasonable connection to I-73

Alternatives 1&3 are UNACCEPTABLE! Alternatives 1&3 both go too far north and would be too disruptive to established communities. Alternative 4 is the least disruptive but would make a poor connection for I-73 traveling around the airport. Alternative 2 is less disruptive than either 1 or 3 but solve the I-73 connection problem. Therefore it is the best choice.

#4 is least negative impact to overall - costs, residents, environment (critical watershed at Reedy Fork Creek)

I own 72 acres on Pleasant Ridge Rd.

Alternative 4 is shorter, less expensive, fewer interchanges, less social impact and fewer businesses and families affected by noise from new highways. Alternative 4 stays within the noise come from the runways 5/23

All options except for Alternative 4 have unacceptable impacts on neighborhoods throughout Colfax, many of which are still in the build-out stage. There will be huge costs involved in compensating homeowners. Alternative 4 confines the new road corridors to mostly industrial and undeveloped areas. It is more than adequate for moving traffic through the area.

Why would county planners be allowed to approve new subdivisions (Quail Creek Bull Run etc.) if they knew roads were planned to divide them in half or separate them?

Option 4 is most preferable as it has less impacts to noise, residential relocation costs and costs associated with interchanges and overall construction of the road. Additionally it will avoid disruption of current expansion plans that are underway in the Woodfield neighborhood. This expansion will allow the community to thrive thus furthering economic growth in this area. Option 4 presents the lowest costs of construction (i.e. Less interchanges etc.) In addition it has less impact to noise. The neighbors of Woodfield are currently in the midst of an expansion to increase the number of homes which in thru will bring further income to the community.

Less disruption to the affected area if use existing 68-Bryan Blvd. Exchange. Alternatives 1&2 have greater socioeconomic impact than Alternatives 3&4

I feel bringing the airport connector from Winston-Salem in at the already existing Bryan Blvd./68 interchange would better serve people coming from I-40 and would create less overall disruption to the area.

Alternative 4 provides less social impact, is less costly (shorter route and fewer interchanges). Alternative 4 stays in the noise cone which already exists from RW 5/23 traffic.

Alternative 4 appears to have the least negative impact on 2 important residential communities - Woodfield and Quail Creek. Please leave these two neighborhoods intact.



Alternative 4 appears to be the most direct route and most efficient.

Alternative 4 has the least impact and disruption. Use of existing roads and routing is optimized. Improves connections and offers a more direct route from I-40 to airport.

Please send me copy of executive summary and maps of 4 options.

Alternative 4 appears to be the shortest route causing the least amount of problems. Route 4 causes the least amount of roadway construction and in terms of noise impact Route 4 is far superior to the othe alternatives. Route 4 will also enable two relatively new residential developments to continue to grow. Ridgewood Development is coming to our development only if Route 4 is chosen. Quail Creek Development will also be negatively affected by routes 1,2,3 so Route 4 is best for that growing community as well. Please send me a copy of the Executive Summary once it is available.

In reviewing the proposed plans, I believe Plan4 is the best plan. It provides the best connection with the least amount of disruption to existing developments. I live in a development that would be directly affected by Plan 2 and do not recommend it due to the construction would require houses in the development to be relocated and would destroy the qualities that I value in where I live

Widen Sandy Ridge from Market St. to I-40. We need to improve the roads we have not build more.

Alternative 4 is my second choice. I do not feel that any of the 4 alternatives are necessary. We have Highway 40 and now bypass 40. Soon 40 in Greensboro is being widened to accommodate the traffic. There is NOT enough airport traffic coming from WS to justify a road through our beautiful neighborhoods. This is completely unnecessary!!

Why is on of the options I-40/Bus40. This is already a heavily congested area. This is the worst example of planning I've ever seen.

Alternative 4 represents the most cost effective alternative to meeting the goals. Also Alternative 4 will allow the proposed addition to the Woodfield Development to be completed, thus providing additional support to local business. Further, Alternative 4 has less watershed acreage impacted. Overall, I believer Alternative 4 provides the best manner in achieving the study goals while relatively minimizing the overall negative impact.

Alternative 4 is most cost-effective in terms of raid length and number of interchanges. With this alternative, there is less socioeconomic impact overall and less noise; it affects the fewest watershed areas (protected) and residential development in previously planned subdivisions will continue as businesses locate nearby and employees are drawn to those neighborhoods.

Summation of Letters and E-mails



Total number of letters and emails 30

Listing of businesses responding	Submitted by	<u>Title</u>
Winston-Salem / Forsyth Co. Schools	Donald Martin	Superintendent
Wake Forest Univ. Baptist Med. Cntr.	Len B. Pleslar	President/CEO
BB&T	Michael Gwyn	Senior VP
BTI	Christopher Maginnis	Accounts Mgr.
Winston-Salem Alliance	Allen Joines	President
DataMax	Thomas Blair	President/CEO
Salem Group	Brian Heelan	Partner
S&L Painting and Decorating, Inc.	Lida Hayes-Calvert	President
Frank L. Blum Construction Co.	J. Andrews Hancock	President
LA Reynolds Garden Showcase	Gerald H. Long	Chairman
Legg Mason	Robert Northington	Resident VP
Novant Health	Greg Beier	President/CEO
Graham & Boles Properties	Katy Boles	President/CEO
Wells Jenkins Lucas & Jenkins, PLLC	Mike Wells,	Esq.Partner
Smith-Phillips Lumber & Building Supply	Mickey W. Boles	President/CEO
Salem Academy and College	Paige French	Planning Dir.
Northwestern Mutual	Royall	
Winston-Salem State University	Harold L. Martin, Sr.	Chancellor
Winston-Salem Chamber of Commerce	Gayle Anderson	President
Amarr Garage Doors	Richard A. Brenner	CEO
Salem Computer Group	Jeff Macintosh	Partner
Salem Group	John Millican	CEO
Horn & Stronach Marketing	Mike Horn	Partner
Quail Creek Resident	Terry Yeazell	Resident
The Public good	Robert Fricke	Citizen
Concerned Citizen	Todd Harmon	Citizen
Quail Creek Resident	Jeff Agee / Judith	Resident
Quail Creek Resident	Mr./Mrs. Green	Resident
Concerned Citizen	Julie S.	Citizen
Branch Banking & Trust Company	Michael Gwyn	Senior VP

Of the 30 letters and e-mails received in response to the Alternative alignments presented to the public the majority of these letters were submitted by business leaders in the region.

There were 6 home-owners that responded in lengthy comment that were not included in the word for word summations presented above.

The general themes of the business leaders that submitted written comments are as follows: Current congestion on I-40 warrants an alternative east-west thoroughfare connecting Winston-Salem and Greensboro.

A roadway connecting I-74 on the Winston-Salem outer loop to I-73 is critical in the economic vitality of the region.



Alternative roadways that provide access to the airport from all points of the region will provide long-term benefits to the region and the businesses that advance with the establishment of the FedEx Mid-Atlantic sorting hub.

The Airport Connector from Forsyth County needs to run parallel to I-40 as presented in alternative 3.

Having another route that travels east-west will improve safety on our current congested roadways.

Number of Completed Surveys – 154 Number of Letters or Emails - 30 Number of Households or businesses responding – 148

Gender of persons responding:

Females – 52

Males - 105

Couples – 11

Unknown – 9

Preference for Alternatives:

8 - No Choice

9 – Alternative 1

6 – Alternative 2

65 – Alternative 3

75 – Alternative 4 (includes 27 spouses)

29 – Alternative 5 (No build)

30 – Letters/Email